

MULTI-YEAR MAINTENANCE COSTS  
OF  
SELECTED ALASKAN HIGHWAYS

BY

Matthew K. Reckard  
Research Engineer

April 1983

Prepared for:

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES  
DIVISION OF PLANNING AND PROGRAMMING  
RESEARCH SECTION  
2301 Peger Road  
Fairbanks, Alaska 99701

The contents of this report reflect the views of the authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Alaska Department of Transportation and Public Facilities. This report does not constitute a standard, specification or regulation.

## TABLE OF CONTENTS

### Page

List of Figures . . . . .	iii
List of Tables . . . . .	iv
Chapter 1: Introduction . . . . .	1
Chapter 2: Route Averages . . . . .	6
Chapter 3: Mile-by-Mile Surface Maintenance Costs . . . . .	20
Chapter 4: Implementation of Research Results . . . . .	76

## LIST OF FIGURES

Page

### Average Maintenance Costs, All Cost Categories

Fig. 1: Group Avg. Paved Roads, Gravel Roads, All Roads. .	9
Fig. 2: Individual Paved Roads . . . . .	10
Fig. 3: Individual Gravel Roads . . . . .	11

### Average Costs, Surface Maintenance Category

Fig. 4: Group Avg. Paved Roads, Gravel Roads, All Roads. .	13
Fig. 5: Individual Paved Roads . . . . .	14
Fig. 6: Individual Gravel Roads. . . . .	15

### Average Costs, Snow and Ice Control

Fig. 7: Group Avg Paved Roads, Gravel Roads, All Roads . .	17
Fig. 8: Individual Paved Roads . . . . .	18
Fig. 9: Individual Gravel Roads . . . . .	19

### Mile-By-Mile Surface Maintenance Costs

Fig. 10: Alaska Hwy., FY '74 - '82 . . . . .	21-24
Fig. 11: Denali Hwy., FY '74 - '82 . . . . .	28-29
Fig. 12: Elliot Hwy., FY '78 - '82 . . . . .	32-33
Fig. 13: Parks Hwy., FY '78 - '82 . . . . .	35-39
Fig. 14: Richardson Hwy., FY '74 - '82 . . . . .	43-46
Fig. 15: Seward-Glenallen Hwy., FY '77 - '82 . . . . .	50-54
Fig. 16: Steese Hwy., FY '74 - '82 . . . . .	58-60
Fig. 17: Sterling Hwy., FY '78 - '82 . . . . .	63-64
Fig. 18: Taylor Hwy., FY '74 - '82 . . . . .	67-69
Fig. 19: Tok Cutoff Hwy., FY '74 - '82 . . . . .	72-73

## LIST OF TABLES

Page

Table 1: Composition of Highway Maintenance Costs by Cost Category	4
Table 2: Alaskan Highways Examined in this Report . . . . .	5
Table 3: Cost Indices . . . . .	5

### Route Average Costs

Table 4: All Maintenance Cost Categories . . . . .	8
Table 5: Surface Maintenance Costs . . . . .	12
Table 6: Snow and Ice Control Costs . . . . .	16

### Mile-By-Mile Surface Maintenance Costs

Table 7: Alaska Hwy., FY '74 - '82 . . . . .	25-27
Table 8: Denali Hwy., FY '74 - '82 . . . . .	30-31
Table 9: Elliot Hwy., FY '78 - '82 . . . . .	34
Table 10: Parks Hwy., FY '78 - '82 . . . . .	40-42
Table 11: Richardson Hwy., FY '74 - '82 . . . . .	47-49
Table 12: Seward-Glenallen Hwy., FY '77 - '82 . . . . .	55-57
Table 13: Steese Hwy., FY '74 - '82 . . . . .	61-62
Table 14: Sterling Hwy., FY '74 - '82 . . . . .	65-66
Table 15: Taylor Hwy., FY '74 - '82 . . . . .	70-71
Table 16: Tok Cutoff Hwy., FY '74 - '82 . . . . .	74-75

## CHAPTER 1

### INTRODUCTION

This report contains multi-year maintenance cost information for most of the major rural highways in Alaska. All figures are derived from data maintained by the Alaska Department of Transportation and Public Facilities (DOTPF). This data base is compiled from employee time and equipment reports (timesheets). Maintenance costs are recorded in four separate categories, which are described in Table 1.

The highways investigated are listed in Table 2. Data for as many years as was readily available were studied; usually this was 9 fiscal years, although in some cases as few as 5 years' data were used.

All costs in this report have been converted to 1982 dollars using the cost indices listed in Table 3. No bridge maintenance costs of any kind are included, nor are costs from urban and/or four lane sections of roads in the Fairbanks and Anchorage areas.

Overhead costs for administration and maintenance of facilities are not included in the figures listed in this report. The "Compilation of Highway and Airport Maintenance Costs" (Research Section Report No. AK-RD-82-16, January 1982) estimated this overhead to add 31% to costs in FY81; their magnitude in other years is not known.

This report is similar in some respects to the "Compilation of Highway and Airport Maintenance Costs". Differences between the two include the following:

- The previous report listed total costs only, whereas this report also lists "roadway surface" and "snow and ice control" costs separately.

- The previous report contained information for FY81 only, whereas this report contains five to nine years' data for each route.

-The previous report listed costs in terms of 1981 dollars per "lane-mile", which was defined as an area 12 feet wide by one mile long (i.e. exactly 7,040 square yards of road surface). This report lists costs in 1982 dollars per mile of roadway, regardless of roadway width.

-The previous report listed only average costs for each major section of each road, whereas "roadway surface" costs are listed by individual mile in this report.

-This report contains information for selected routes only, whereas the previous report contained data for all state-maintained roads.

Chapter 2 contains annual costs (in 1982 dollars per mile) averaged over all highway mileage studied. It contains separate figures averaged over all the mileage with paved surfaces and all with gravel surfaces, as well as averages by individual route. Figures are presented for total maintenance costs and also for the "roadway surface" and "snow and ice control" cost categories.

Chapter 3 presents multi-year surface maintenance cost averages by individual mile of each route studied.

It should be noted that these historical maintenance costs do not indicate how much money should have been spent on these routes, nor do they indicate the quality of performance achieved by these maintenance expenditures.

Investigation of those highway sections which show very high maintenance costs should be helpful in programming reconstruction and repair work. Conversely, investigation of low cost sections may identify successful design features which could be imitated elsewhere. In some cases, however, very high or low costs listed in this report may be due to a problem in cost reporting or accounting. The consistently high surface maintenance costs in the Healy Maintenance Station's section of the Parks Highway, for example, drop sharply in adjacent sections (see Fig. 13). These high costs, then, may indicate an accounting problem at that station rather than a problem with the road itself.

### A Note on CDS Routes

The data are reported in terms of the Coordinated Data System (CDS) logs for each route. Route miles in the CDS logs often differ from historical route mileposts, and occasionally even the name of a route differs from the traditional name. In the current CDS log, for example, the road between Delta Junction and Fairbanks is part of the Alaska Highway, not the Richardson. The CDS "Seward-Glenallen Highway" is a combination of the traditionally named Seward and Glenn Highways, beginning in Seward. The CDS "Elliot Highway" runs between the Dalton Highway turnoff north of Livengood and Manley Hot Springs. In earlier years the CDS "Elliot Highway" extended between Fox and Eureka (these incompatible data are not included in this report). The Steese Highway is now listed in the CDS logs as the 152 miles of road between Fox and Circle City; prior to FY 1978 it was included as an extension of the Parks Highway. Reported figures for the Steese between '74 and '75 in this report are the last 152 miles of the earlier route listing.

Revisions in the CDS route logs have occurred from time to time, particularly in 1977 and 1978. Where such changes were minor and could be accounted for, the earlier data are included; small differences in route lengths, etc., may therefore be noticed in the report.

TABLE 1

COMPOSITION OF HIGHWAY MAINTENANCE COSTS  
BY COST CATEGORY

Roadway and Runway Surface

- Patching - hand
- Patching - machine, overlay and leveling
- Pavement crack and joint sealing - hand
- Seal coating - chip, sand and fog, slurry
- Blading and restoring unpaved surfaces and shoulders,
- Dust Control
- Base stabilization and repair - spot gravel
- Base stabilization and repair - general grading

Airport and Roadside Facilities

- Cleaning drainage structures
- Drainage structure, replacement or repair
- Cleaning and shaping ditches
- Slope repair - washout and erosion
- Stream bed maintenance
- Path and trail maintenance
- Fence, gate and cattle guard maintenance
- Litter barrel and trash cleanup
- Sweeping - machine
- Sweeping - hand
- Patrol and inspection

Traffic Services

- Sign installation, replacement and maintenance
- Delineator posts, reflectors and milepost markers - install, replace and clean tie-downs
- Guard rail maintenance
- Pavement striping - machine
- Pavement marking or removal - hand machine
- Roadway and sign lighting - maintenance and illumination
- Traffic signal maintenance and power

Snow and Ice Control

- Snow removal
- Avalanche control and cleanup
- Thawing/related costs
- Sanding and ice control



TABLE 2

## ALASKAN HIGHWAYS EXAMINED IN THIS REPORT

<u>CDS Route No.</u>	<u>Name</u>
110,000	Sterling Highway
130,000	Seward-Glenallen Highway
140,000	Denali Highway
152,000	Steese Highway
153,000	Elliot Highway
170,000	Parks Highway
180,000	Alaska Highway
190,000	Richardson Highway
230,000	Tok Cutoff Highway
250,000	Taylor Highway

TABLE 3 - COST INDICES

To account for inflation, costs were multiplied by the following factors to convert them to equivalent 1982 dollars. These factors were calculated from typical increases in maintenance personnel wage levels over the period.

<u>Fiscal Year of Cost</u>	<u>Cost Index</u>
1974	1.78
1975	1.70
1976	1.61
1977	1.52
1978	1.45
1979	1.35
1980	1.20
1981	1.10
1982	1.00

## CHAPTER 2

### ROUTE AVERAGES

This chapter contains average costs per mile for entire routes in the "surface maintenance" and "snow and ice control" categories, as well as figures for total maintenance costs (all categories). These figures are listed for each year studied; multi-year averages are also included.

Average costs per mile have also been computed for the group of roads with paved surfaces, for those with gravel surfaces, and for all studied roads combined.

### NOTES TO TABLES & FIGURES IN CHAPTER 2

1. The "gravel" road category includes the Steese, Elliot, Taylor, and Denali Highways; all other routes are in the "paved" road category. These categories are not entirely accurate, since in reality the first 31 miles of the CDS Steese Highway (as far as historical milepost 44) are paved, as are the first 21 miles of the Denali Highway. All routes in the "paved" category are entirely paved with asphalt concrete or asphalt surface treatments.
2. All of the roads in the "paved" category are kept open in winter, while with one exception those in the "gravel" category are not maintained in winter. The exception is the Steese Highway, which is kept open in winter as far as the end of the pavement and also between Central and Circle; a total of about 66 miles or more than 40% of the length of the route.

3. All multi-route averages are weighted according to the lengths of the routes involved. These route lengths are as follows (variations indicate changes in the CDS log and/or unavailability of complete data).

Taylor Hwy: 161 miles (all years)

Denali Hwy: 135 miles ('74-'77), 136 miles ('78-'82)

Steese Hwy: 152 miles (all years)

Elliot Hwy: 84 miles ('78-'82), no data for earlier years

Parks Hwy: 279 miles ('74-'76), 278 miles ('77), 316 miles ('78-'82)

Sterling Hwy: 139 miles ('78-'82), no data for earlier years

Alaska Hwy: 275 miles, (all years)

Richardson Hwy: 271 miles ('74-'77), 272 miles ('78-'82)

Tok Cutoff Hwy: 124 miles (all years)

Seward/Glenallen Hwy: 260 miles ('77-'82), no data for earlier years

4. Urban and/or four lane sections of highways in the Fairbanks and Anchorage areas have not been included in the averages. These sections include the Anchorage Maintenance Station section of the Seward/Glenallen Highway, the end of the Alaska Highway (between Eielson Air Force Base and Fairbanks) and the end of the Parks Highway (between Ester and Fairbanks).

TABLE 4

## ROUTE AVERAGE COSTS

All Maintenance Cost Categories, 1982 Dollars Per Mile

HIGHWAY	FISCAL YEAR									
	'74	'75	'76	'77	'78	'79	'80	'81	'82	AVG.
Taylor	2,019	4,213	3,410	2,312	2,709	2,813	2,558	2,776	3,489	2,922
Denali	1,530	1,930	1,984	2,112	2,790	2,690	2,633	4,277	2,304	2,472
Steese	3,696	3,402	4,469	4,495	4,579	3,251	4,539	3,520	4,060	4,001
Elliot	N/A	N/A	N/A	N/A	6,376	4,913	5,334	3,606	4,752	4,996
Parks	5,175	6,853	7,521	7,016	9,782	7,783	9,285	6,699	7,749	7,590
Sterling	N/A	N/A	N/A	N/A	10,620	8,145	9,671	5,542	6,479	8,091
Alaska	3,435	4,436	5,468	4,521	6,359	6,490	5,163	7,570	7,972	5,713
Richardson	8,225	12,115	14,084	15,412	16,702	15,742	17,227	15,071	14,245	14,317
Tok Cutoff	7,153	6,648	7,414	5,870	8,871	11,756	7,949	8,008	6,184	7,761
Seward/ Glenallen	8,929	10,511	11,319	10,910	15,916	11,747	13,945	9,767	9,491	11,393
Avg. Gravel	2,441	3,250	3,340	2,992	3,841	3,237	3,580	3,502	3,549	3,326
Avg. Paved	6,469	8,245	9,328	9,052	11,608	10,222	10,813	9,090	9,125	9,393
Avg. All	5,379	6,893	7,707	7,413	9,453	8,284	8,806	7,539	7,578	7,726

Figure 1

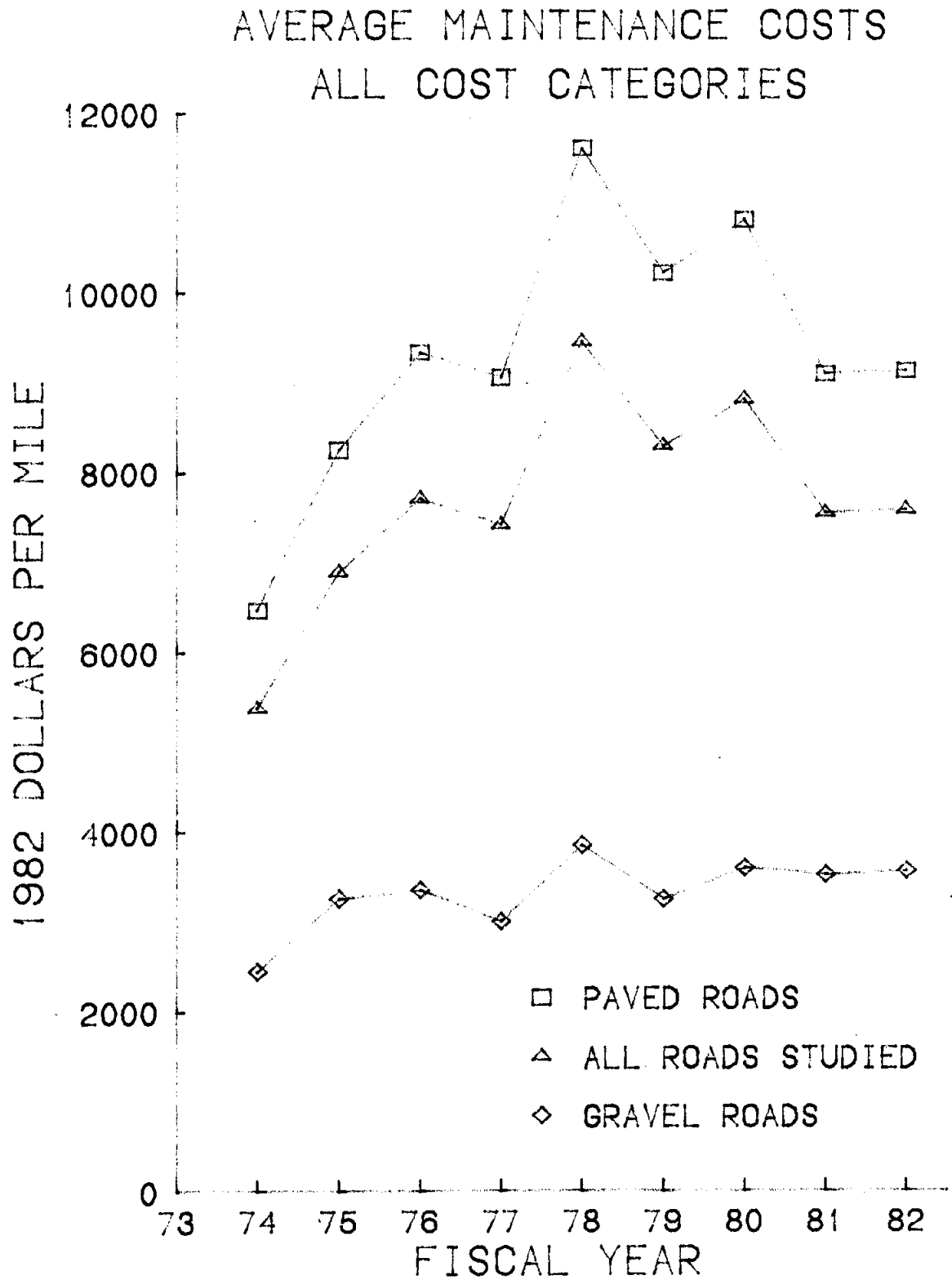


Figure 2

# AVERAGE MAINTENANCE COSTS ALL COST CATEGORIES

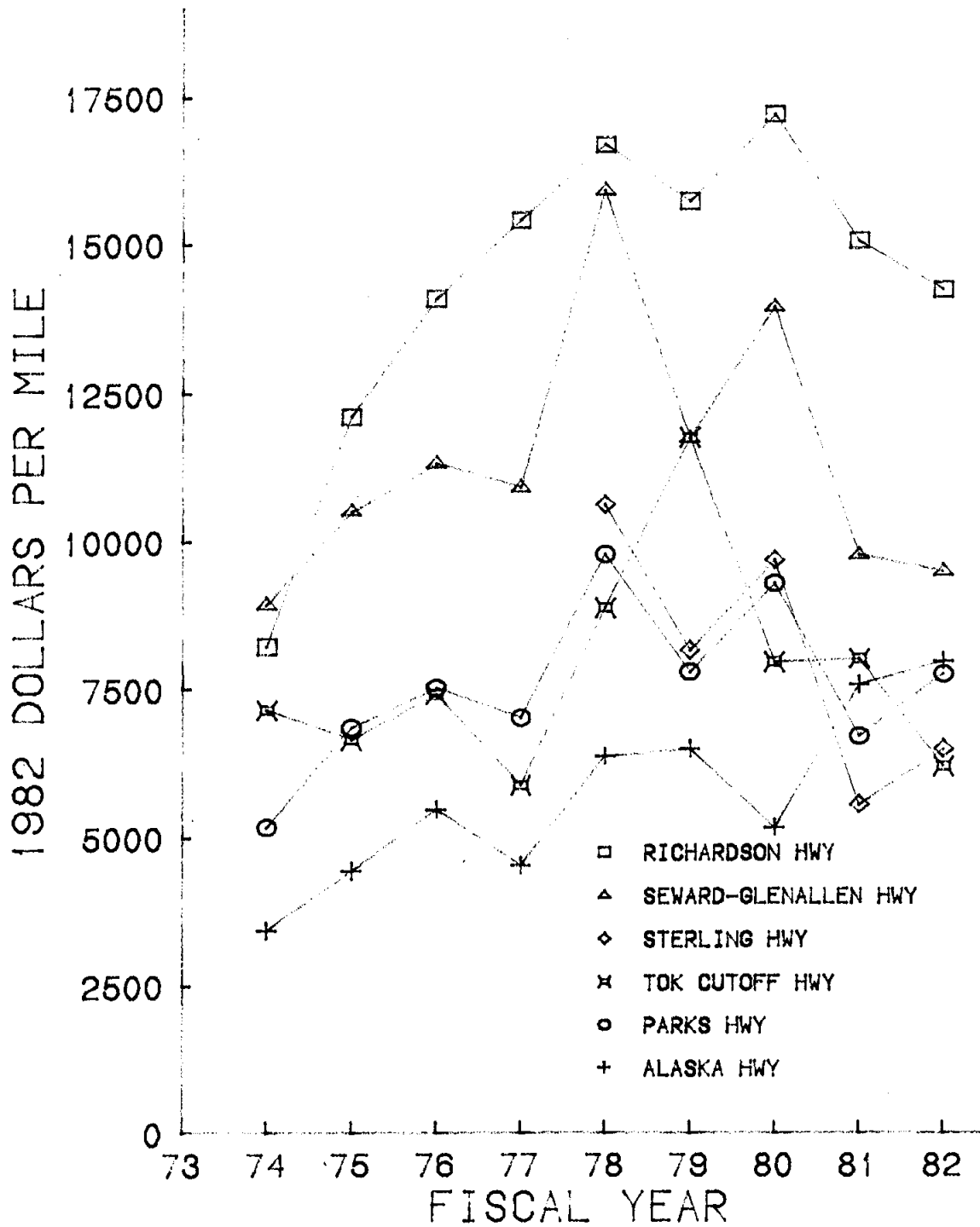


Figure 3

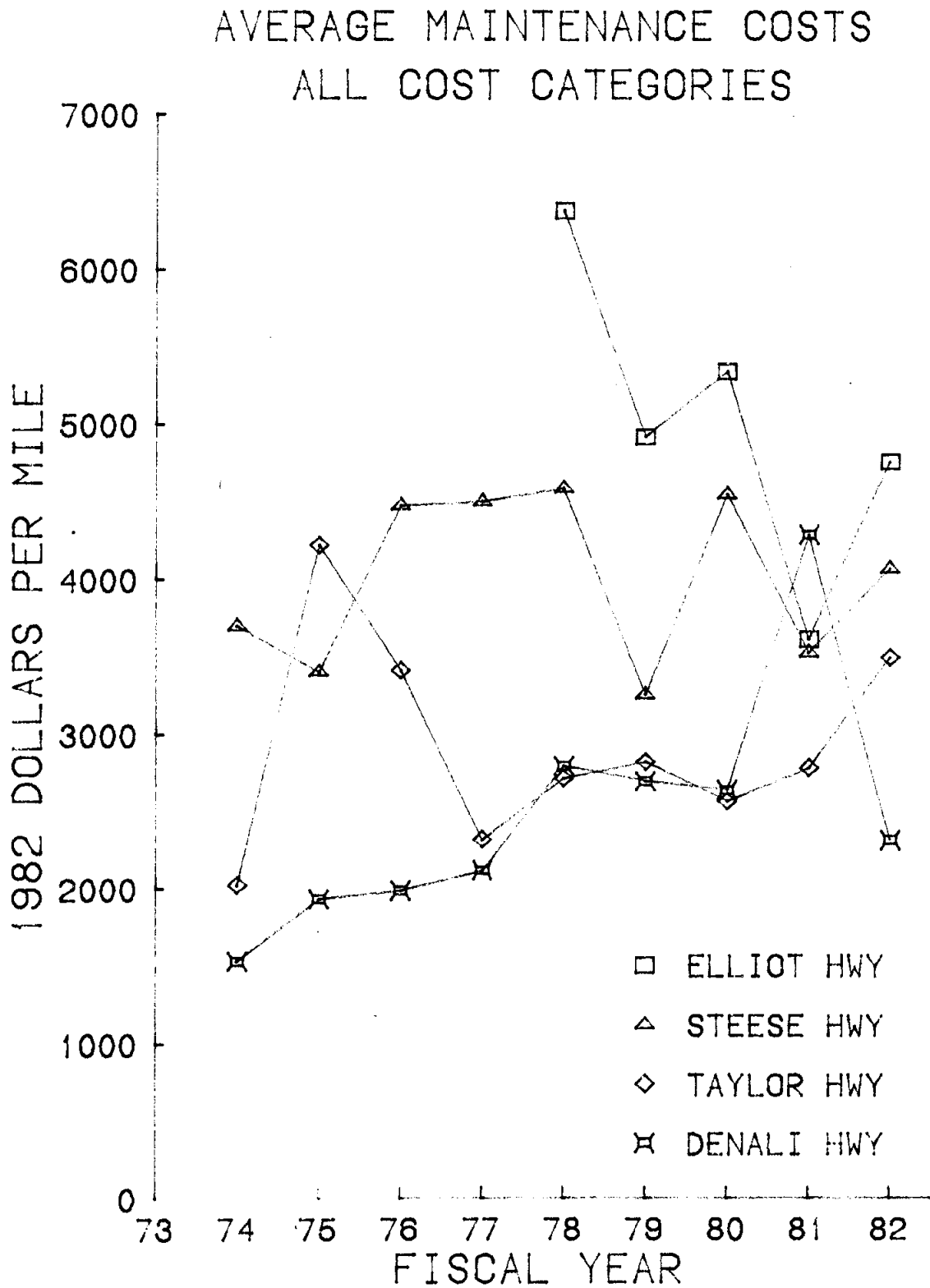


TABLE 5

## ROUTE AVERAGE COSTS

Surface Maintenance, 1982 Dollars Per Mile

HIGHWAY	FISCAL YEAR									AVG.
	'74	'75	'76	'77	'78	'79	'80	'81	'82	
Taylor	743	1,557	2,401	1,296	1,167	1,220	1,255	1,254	1,352	1,361
Denali	721	705	1,089	1,818	1,437	942	1,696	3,195	1,192	1,423
Steese	1,680	1,211	2,075	2,791	1,948	1,288	2,072	1,493	1,299	1,762
Elliot	N/A	N/A	N/A	N/A	4,053	926	2,561	1,551	1,770	2,172
Parks,	1,791	1,963	2,782	1,732	4,136	2,341	2,405	2,590	3,429	2,603
Mile 0-316										
Sterling	N/A	N/A	N/A	N/A	5,302	3,016	3,862	1,827	1,974	3,196
Alaska	1,886	1,838	3,446	2,112	4,109	4,179	2,599	4,459	4,347	3,219
Mile 0-275										
Richardson	2,039	2,391	4,421	4,992	5,992	4,580	4,217	3,506	2,117	3,807
Tok Cutoff	4,840	3,480	4,150	3,071	5,758	7,661	4,481	5,408	2,642	4,610
Seward/	N/A	N/A	N/A	5,334	6,283	3,956	3,525	2,734	2,920	4,125
Glenallen										
Avg. Gravel	1,054	1,183	1,895	1,961	1,913	1,122	1,806	1,864	1,362	1,577
Avg. Paved	2,288	2,247	3,621	3,463	5,160	3,991	3,341	3,343	3,042	3,467
Avg. All	1,892	1,906	3,068	3,056	4,258	3,195	2,915	2,932	2,575	2,922



Figure 4

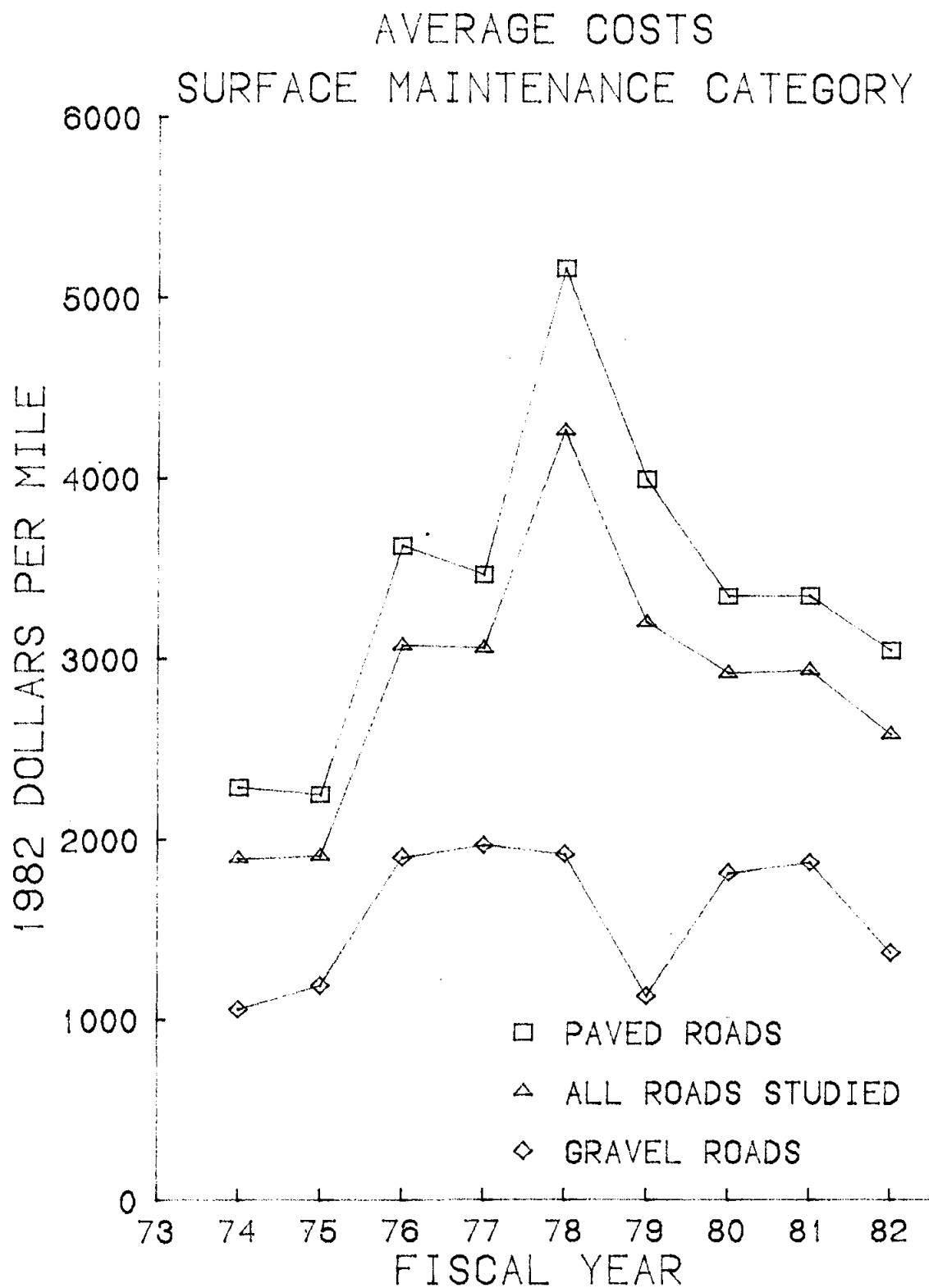


Figure 5

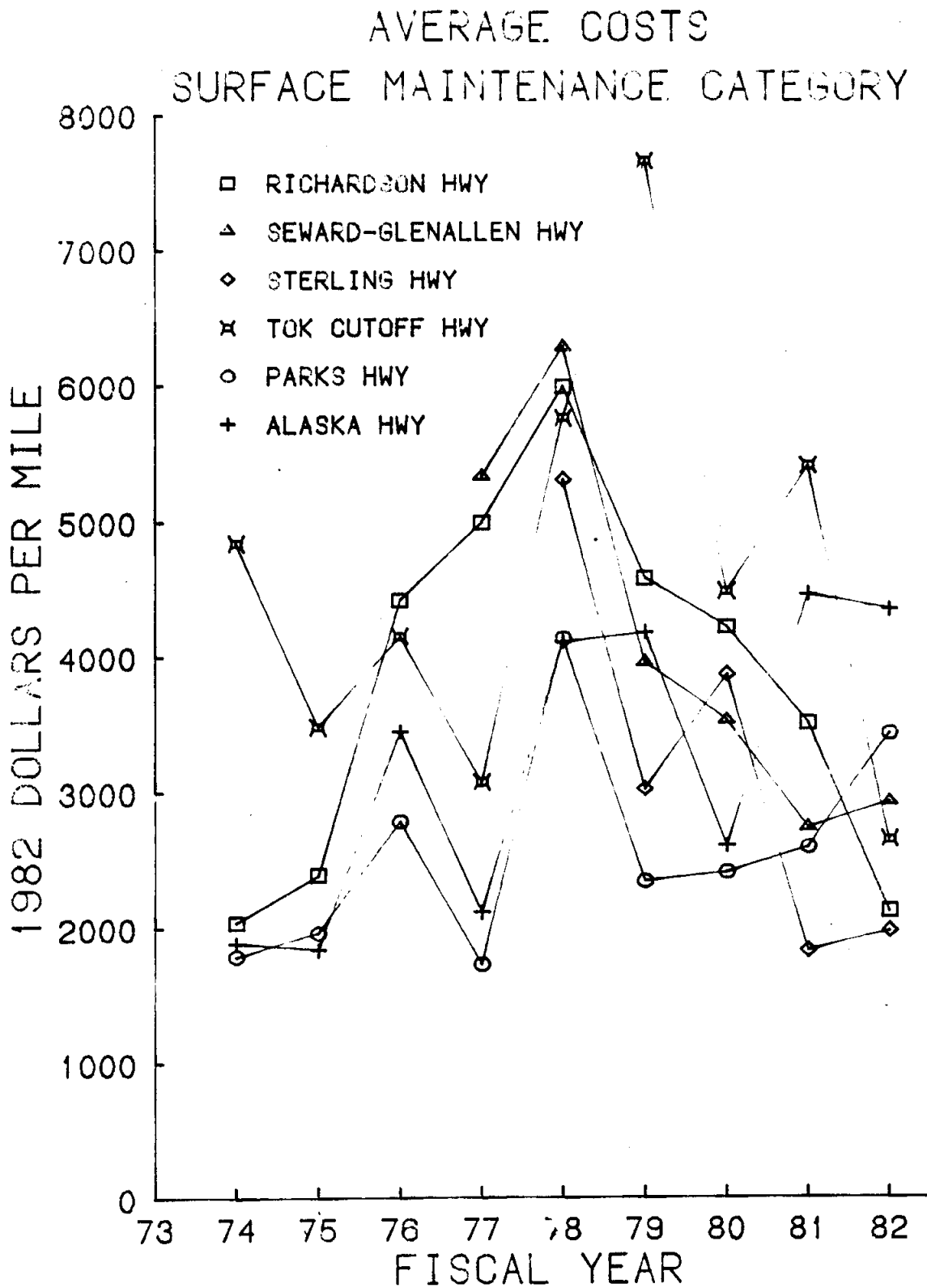


Figure 6

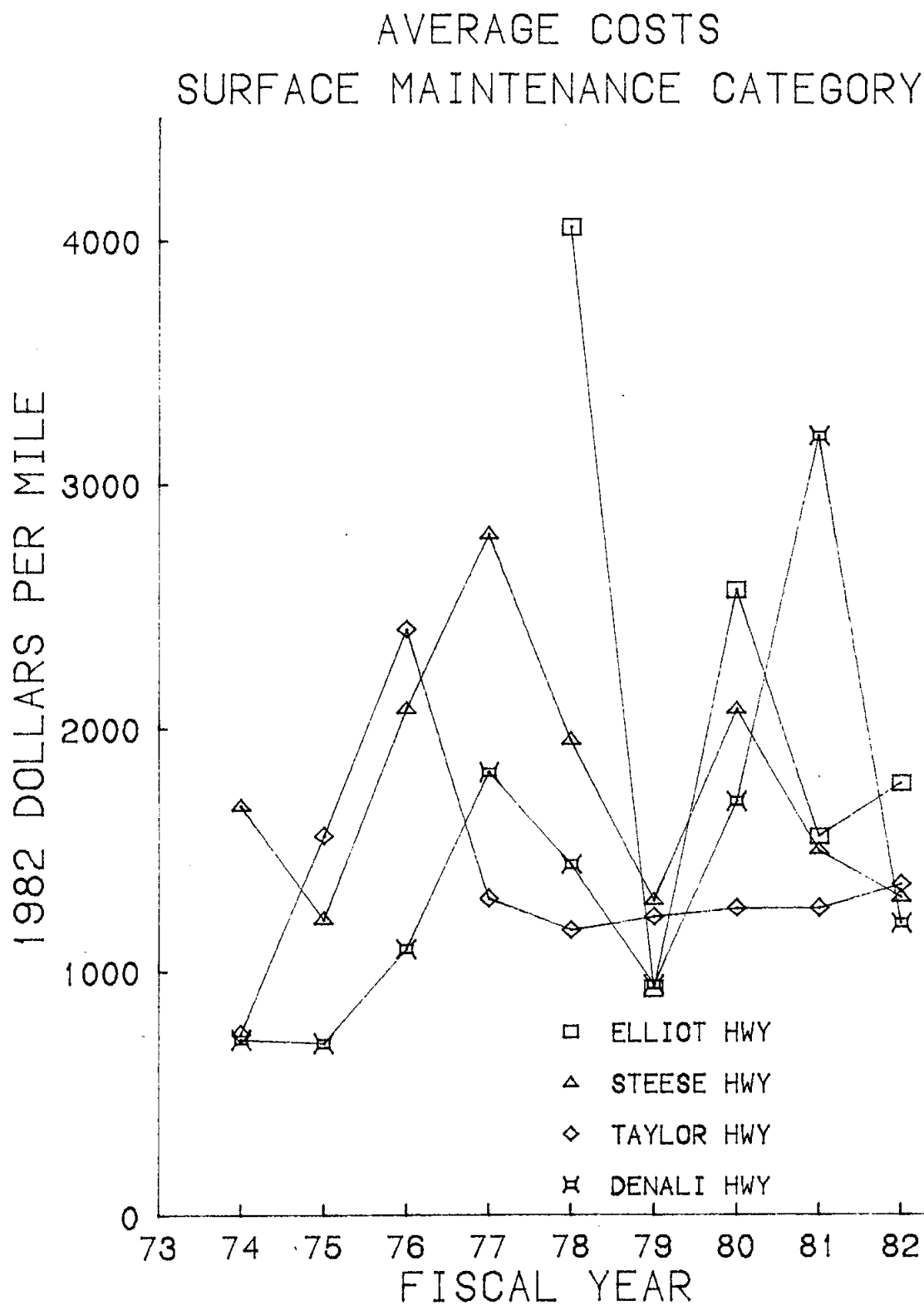


TABLE 6

ROUTE AVERAGE COSTS  
Snow & Ice Removal, 1982 Dollars Per Mile

HIGHWAY	FISCAL YEAR									AVG.
	'74	'75	'76	'77	'78	'79	'80	'81	'82	
Taylor	248	1,694	1,014	158	544	913	525	753	1,340	799
Denali	733	986	869	210	831	1,479	789	623	960	832
Steese	1,543	1,538	2,395	796	2,126	1,534	1,683	1,207	1,850	1,630
Elliot	N/A	N/A	N/A	N/A	1,354	2,951	1,565	1,214	2,398	1,896
Parks	1,865	4,078	4,721	4,622	3,625	3,879	4,439	2,236	2,987	3,594
Sterling	N/A	N/A	N/A	N/A	4,068	3,625	4,210	1,986	2,048	3,187
Alaska	1,063	2,104	2,009	1,638	1,503	1,351	1,652	1,229	2,168	1,635
Richardson	4,991	8,521	9,411	8,863	7,929	7,823	9,834	8,588	8,103	8,230
Tok Cutoff	1,578	1,970	3,105	2,403	2,038	2,928	1,828	1,448	2,462	2,195
Seward/ Glenallen	3,328	5,764	7,636	4,404	6,833	5,551	7,849	3,946	4,046	5,484
Avg. Gravel (closed in Winter) *	834	1,428	1,439	390	1,196	1,556	1,087	922	1,555	1,167
Avg. Paved (open in Winter)	2,667	4,770	5,613	4,619	4,549	4,351	5,323	3,505	3,884	4,361
Avg. All	2,171	3,865	4,483	3,475	3,619	3,576	4,147	2,788	3,238	3,484

\* See Note 2

Figure 7

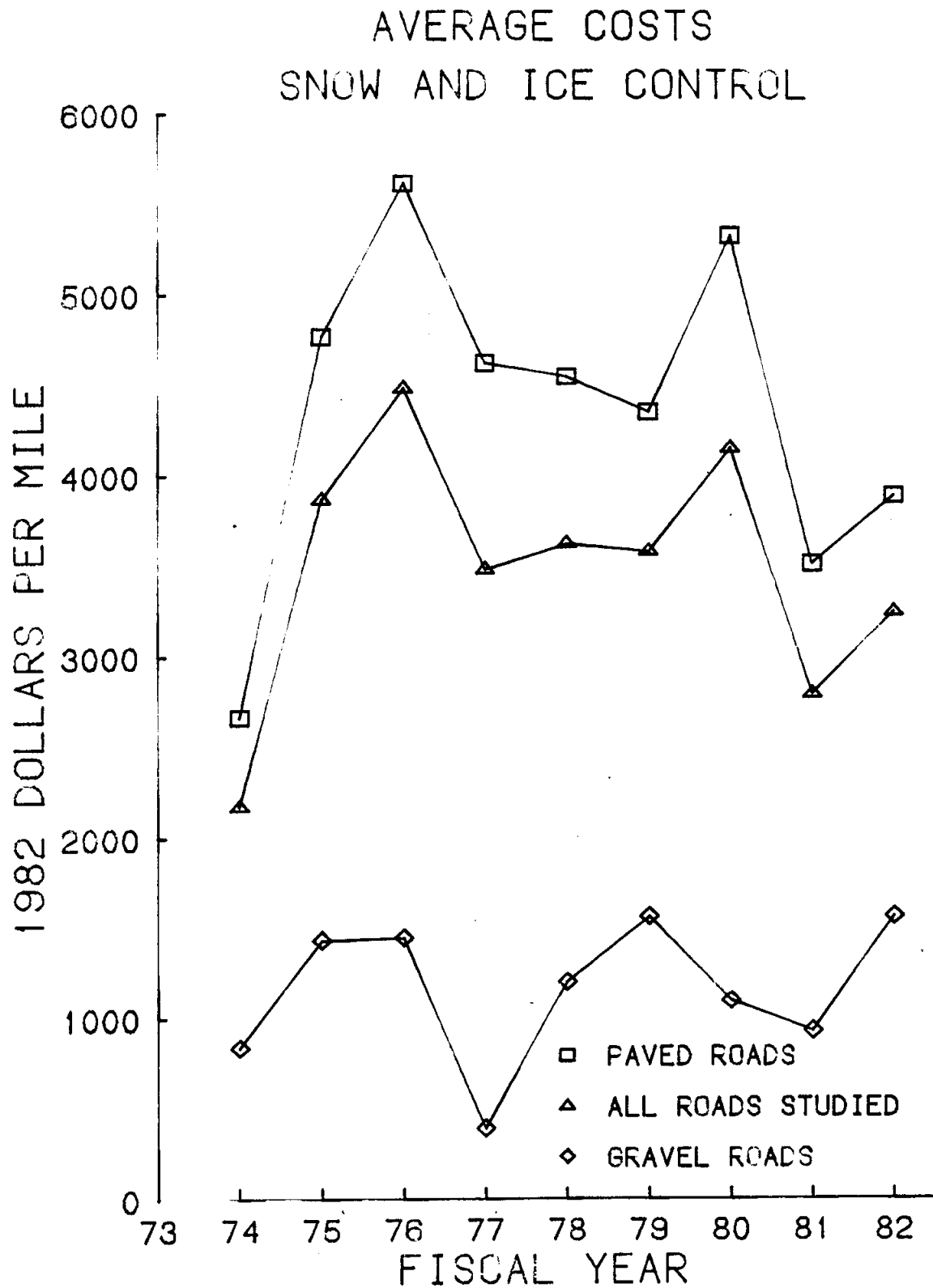


Figure 8

## AVERAGE COSTS SNOW AND ICE CONTROL

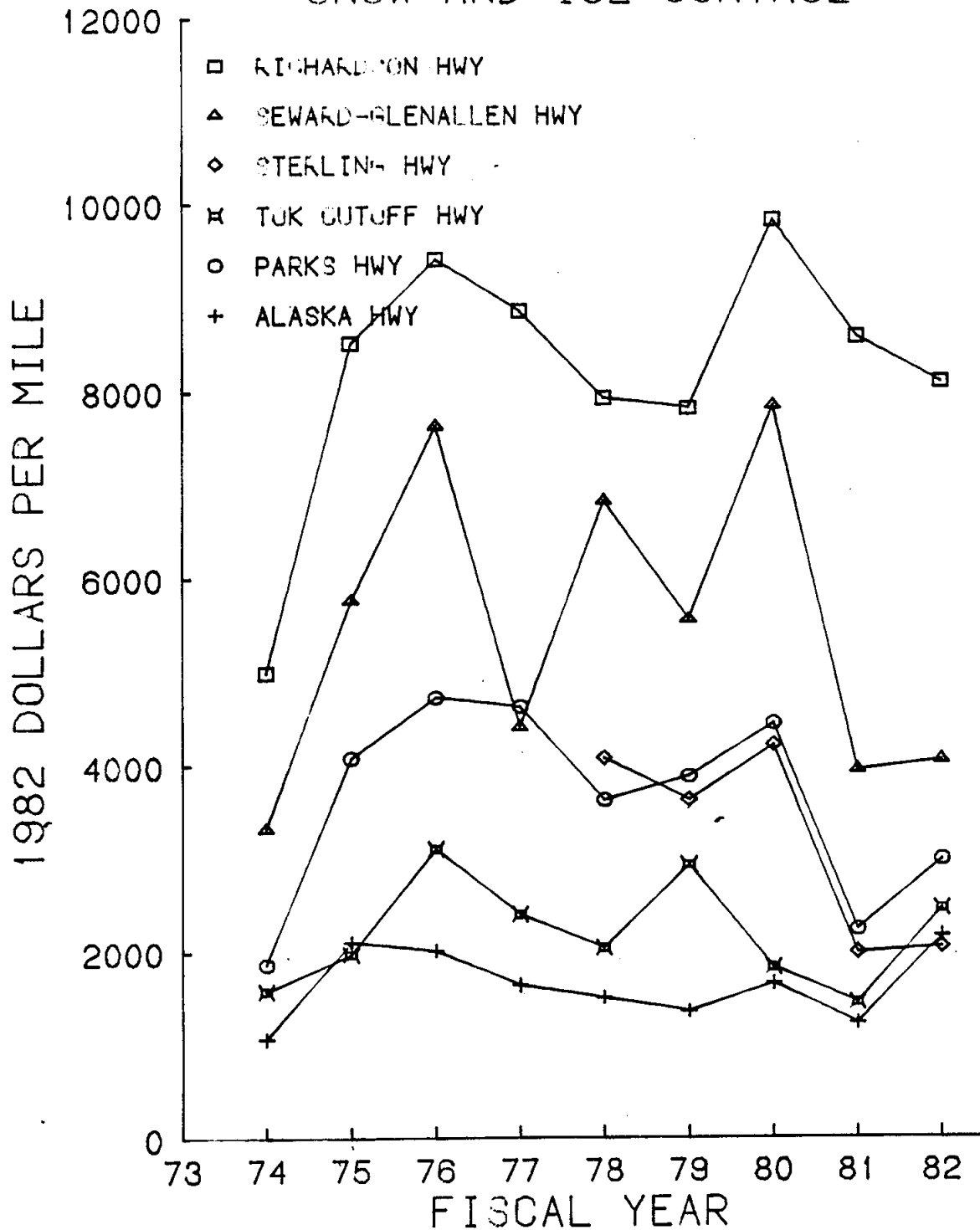
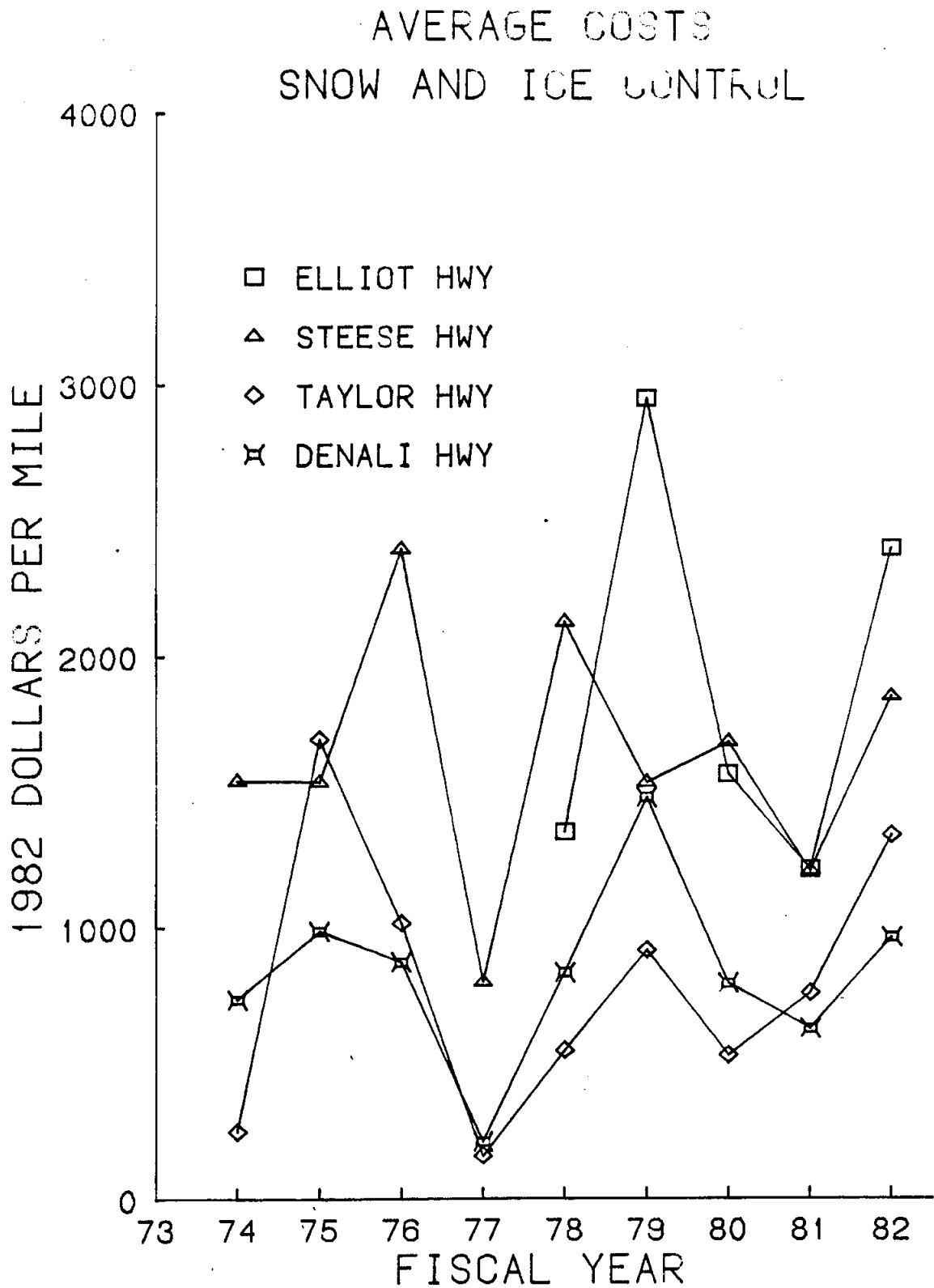


Figure 9



## CHAPTER 3

### MILE-BY-MILE SURFACE MAINTENANCE COSTS

This chapter contains average annual expenses in the surface maintenance category by individual mile of roadway. The figures are listed in 1982 dollars, and the years used in computing the averages are noted on the tables and figures. The routes include all of those listed in Table 2. They are listed in the alphabetical order of their names.

No figures have been computed for the last 22 miles of the Alaska Highway (the four lane section between Eielson Air Force Base and Fairbanks).



# ALASKA HWY FY 74-82 SURFACE MAINTENANCE COSTS

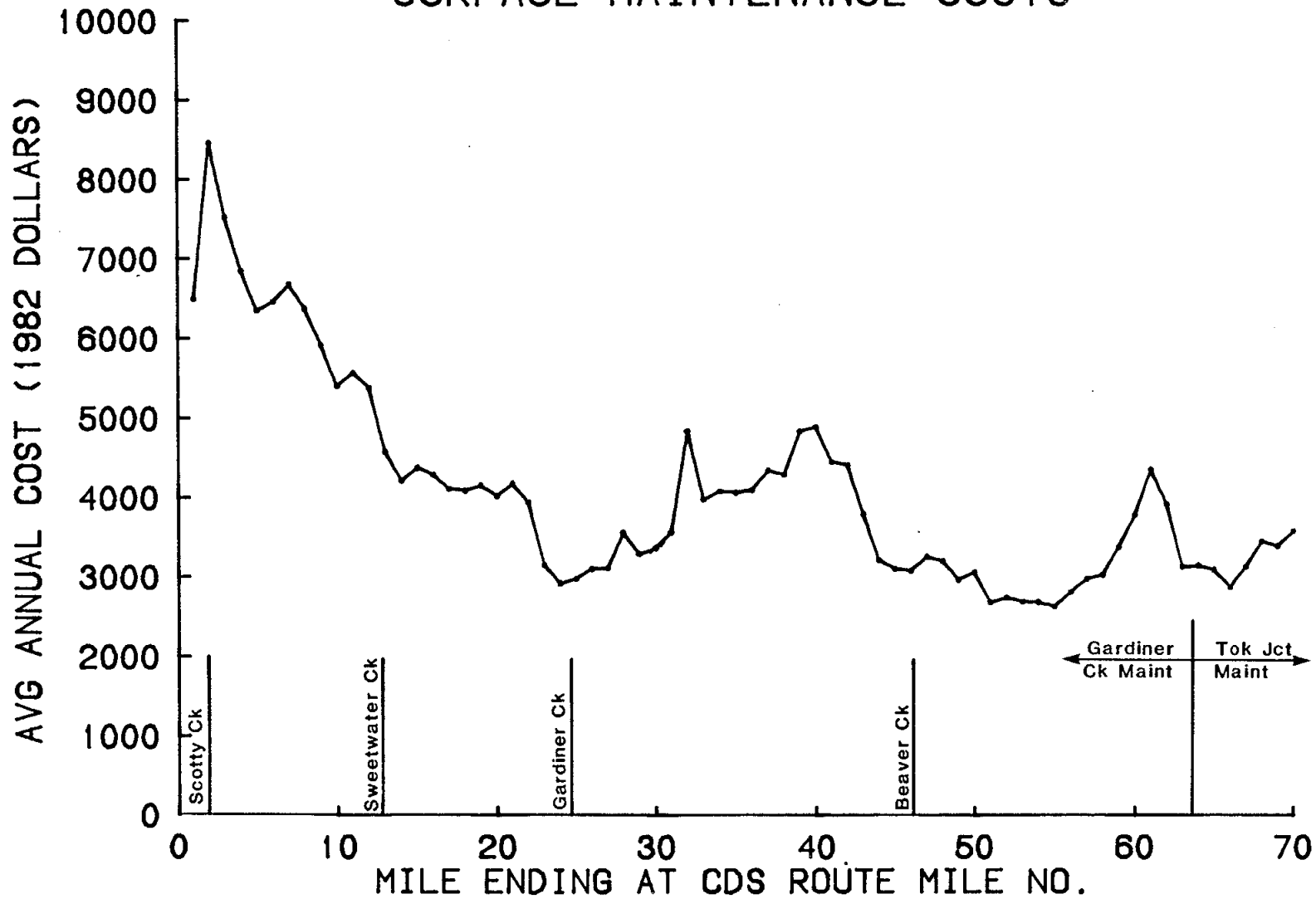


Figure 10

# ALASKA HWY FY 74-82 SURFACE MAINTENANCE COSTS

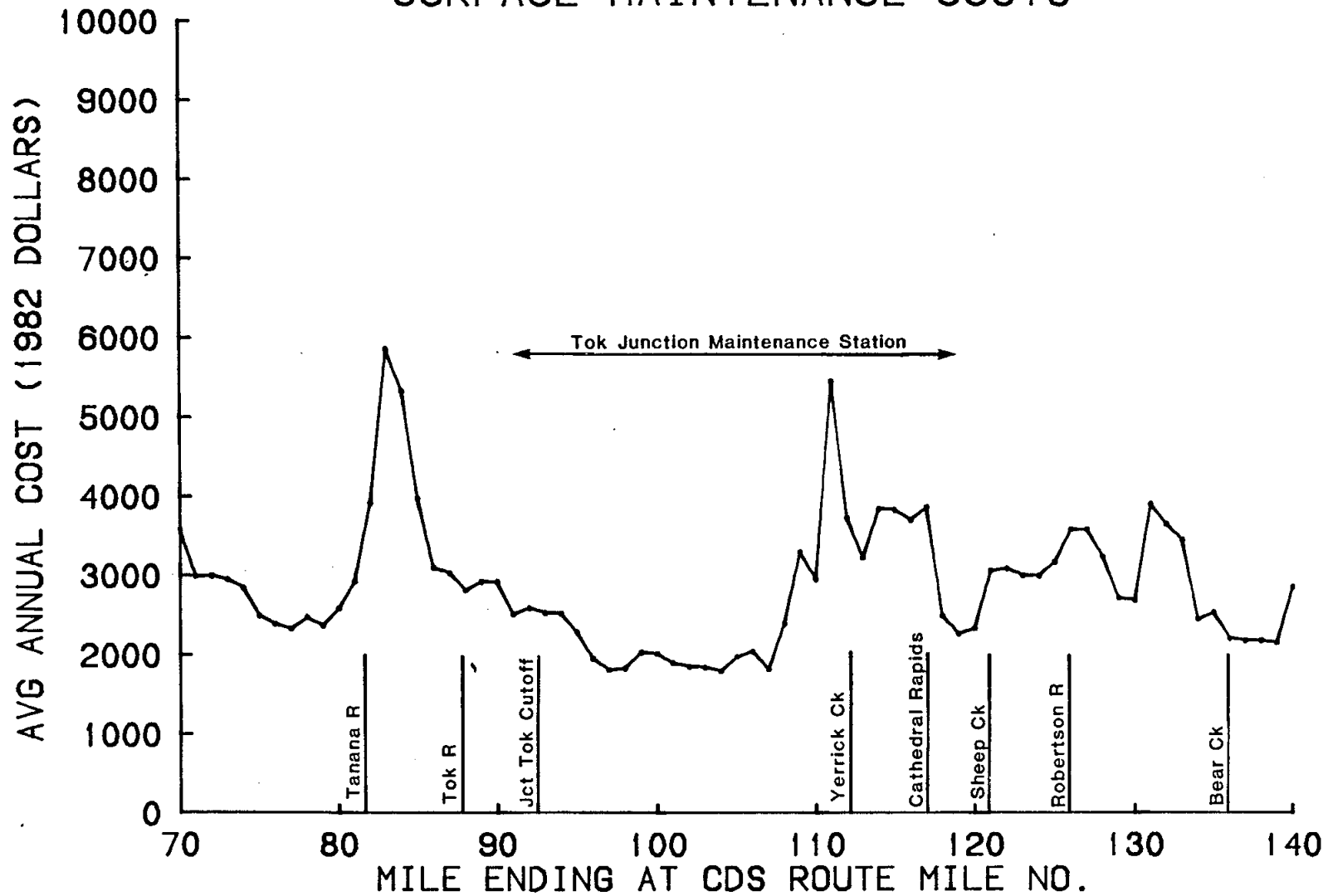


Figure 10

# ALASKA HWY FY 74-82 SURFACE MAINTENANCE COSTS

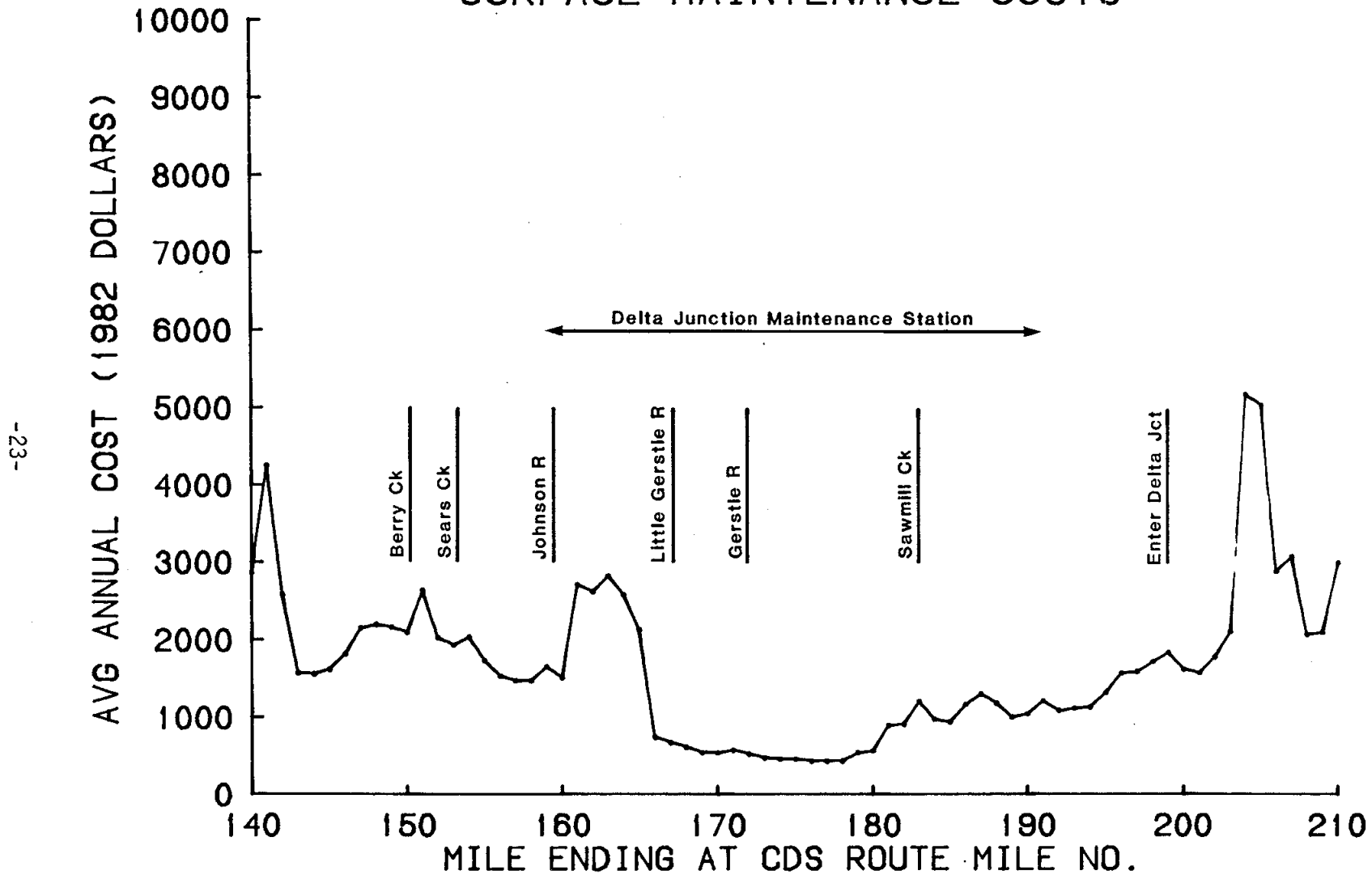


Figure 10 (cont.)

# ALASKA HWY FY 74-82 SURFACE MAINTENANCE COSTS

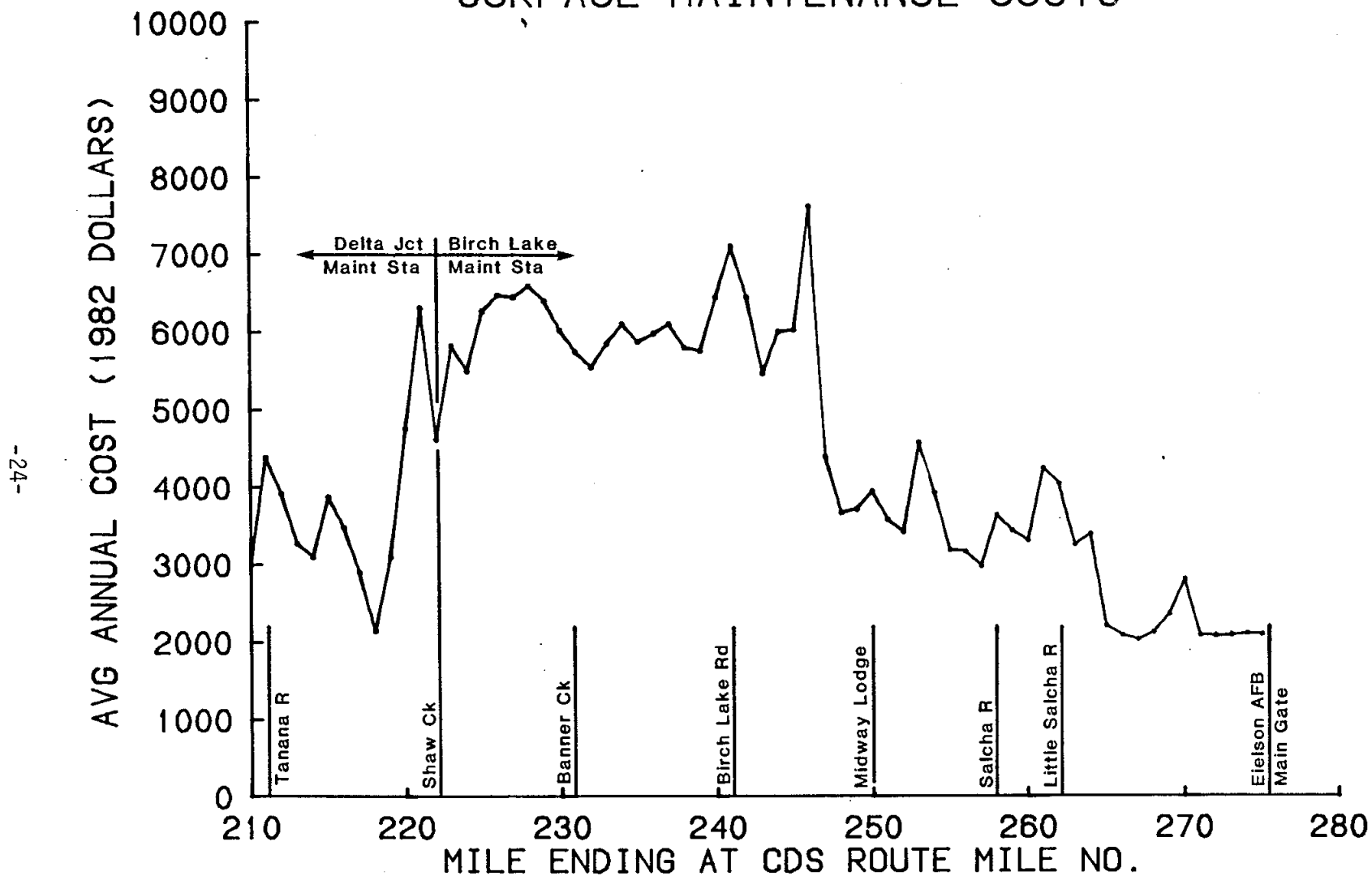


Figure 10 (cont.)

TABLE 7

Alaska Highway, CDS Route 180,000  
Average Annual Surface Maintenance Costs FY '74-'82

<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>
0 - 1	6,488	29 - 30	3,364	- 59	3,375	- 88	2,808
- 2	8,456	- 31	3,566	59 - 60	3,784	- 89	2,917
- 3	7,523	- 32	4,840	- 61	4,356	89 - 90	2,913
- 4	6,844	- 33	3,978	- 62	3,922	- 91	2,510
- 5	6,349	- 34	4,081	- 63	3,128	- 92	2,586
- 6	6,461	- 35	4,065	- 64	3,143	- 93	2,526
- 7	6,682	- 36	4,097	- 65	3,093	- 94	2,522
- 8	6,373	- 37	4,344	- 66	2,872	- 95	2,284
- 9	5,916	- 38	4,292	- 67	3,128	- 96	1,951
9 - 10	5,400	- 39	4,836	- 68	3,451	- 97	1,869
- 11	5,565	39 - 40	4,889	- 69	3,393	- 98	1,826
- 12	5,381	- 41	4,448	69 - 70	3,579	- 99	2,027
- 13	4,578	- 42	4,411	- 71	2,992	99 - 100	2,008
- 14	4,214	- 43	3,787	- 72	2,997	- 101	1,893
- 15	4,377	- 44	3,208	- 73	2,948	- 102	1,845
- 16	4,288	- 45	3,099	- 74	2,846	- 103	1,835
- 17	4,110	- 46	3,075	- 75	2,495	- 104	1,790
- 18	4,086	- 47	3,253	- 76	2,388	- 105	1,971
- 19	4,154	- 48	3,202	- 77	2,329	- 106	2,036
19 - 20	4,016	- 49	2,966	- 78	2,474	- 107	1,810
- 21	4,174	49 - 50	3,059	- 79	2,367	- 108	2,386
- 22	3,942	- 51	2,681	79 - 80	2,57	- 109	3,287
- 23	3,148	- 52	2,739	- 81	2,923	109 - 110	2,947
- 24	2,923	- 53	2,688	- 82	3,917	- 111	5,450
- 25	2,978	- 54	2,684	- 83	5,853	- 112	3,723
- 26	3,106	- 55	2,629	- 84	5,325	- 113	3,218
- 27	3,114	- 56	2,812	- 85	3,974	- 114	3,836
- 28	3,563	- 57	2,977	- 86	3,094	- 115	3,826
- 29	3,294	- 58	3,027	- 87	3,025	- 116	3,695

TABLE 7 (cont.)

CDS Mile	Average Cost 1982 Dollars	CDS Mile	Average Cost 1982 Dollars	CDS Mile	Average Cost 1982 Dollars	CDS Miles	Average Cost 1982 Dollars
- 117	3,862	- 146	1,816	- 175	451	- 206	2,878
- 118	2,489	- 147	2,151	- 176	426	- 207	3,067
- 119	2,266	- 148	2,194	- 177	426	- 208	2,065
119 - 120	2,328	- 149	2,159	- 178	426	- 209	2,090
- 121	3,061	149 - 150	2,093	- 179	534	209 - 210	2,988
- 122	3,086	- 151	2,634	179 - 180	559	- 211	4,380
- 123	2,997	- 152	2,018	- 181	887	- 212	3,912
- 124	2,996	- 153	1,928	- 182	905	- 213	3,272
- 125	3,167	- 154	2,032	- 183	1,202	- 214	3,097
- 126	3,582	- 155	1,728	- 184	970	- 215	3,871
- 127	3,582	- 156	1,528	- 185	934	- 216	3,480
- 128	3,236	- 157	1,468	- 186	1,160	- 217	2,894
- 129	2,714	- 158	1,468	- 187	1,297	- 218	2,141
129 - 130	2,685	- 159	1,649	- 188	1,182	- 219	3,097
- 131	3,903	159 - 160	1,513	- 189	999	219 - 220	4,754
- 132	3,649	- 161	2,705	189 - 190	1,040	- 221	6,308
- 133	3,452	- 162	2,619	- 191	<u>1,206</u>	- 222	4,616
- 134	2,452	- 163	2,818	- 192	1,084	- 223	5,820
- 135	2,533	- 164	2,581	- 193	1,112	- 224	5,495
- 136	2,206	- 165	2,129	- 194	1,126	- 225	6,263
- 137	2,177	- 166	737	- 195	1,311	- 226	6,468
- 138	2,177	- 167	665	- 196	1,566	- 227	6,443
- 139	2,152	- 168	607	- 197	1,583	- 228	6,588
139 - 140	2,855	- 169	535	- 198	1,708	- 229	6,399
- 141	4,248	169 - 170	532	- 199	1,829	229 - 230	6,019
- 142	2,578	- 171	566	199 - 200	1,616	- 231	5,743
- 143	1,573	- 172	516	- 201	1,568	- 232	5,540
- 144	1,556	- 173	467	- 202	1,776	- 233	5,845
- 145	1,615	- 174	451	- 203	2,102	- 234	6,098
				- 204	5,164	- 235	5,870
				- 205	5,026	- 236	5,974

TABLE 7 (cont.)

<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 237	6,100	- 265	2,202
- 238	5,793	- 266	2,078
- 239	5,748	- 267	2,024
239 - 240	6,439	- 268	2,117
- 241	7,097	- 269	2,353
- 242	6,438	269 - 270	2,801
- 243	5,458	- 271	2,079
- 244	5,997	- 272	2,073
- 245	6,019	- 273	2,083
- 246	7,610	- 274	2,100
- 247	4,388	- 275	2,091
- 248	3,658		
- 249	3,705		
249 - 250	3,935		
- 251	3,569		
- 252	3,414		
- 253	4,558		
- 254	3,916		
- 255	3,183		
- 256	3,159		
- 257	2,975		
- 258	3,629		
- 259	3,430		
259 - 260	3,304		
- 261	4,236		
- 262	4,036		
- 263	3,250		
- 264	3,385		

# DENALI HWY FY 74-82 SURFACE MAINTENANCE COSTS

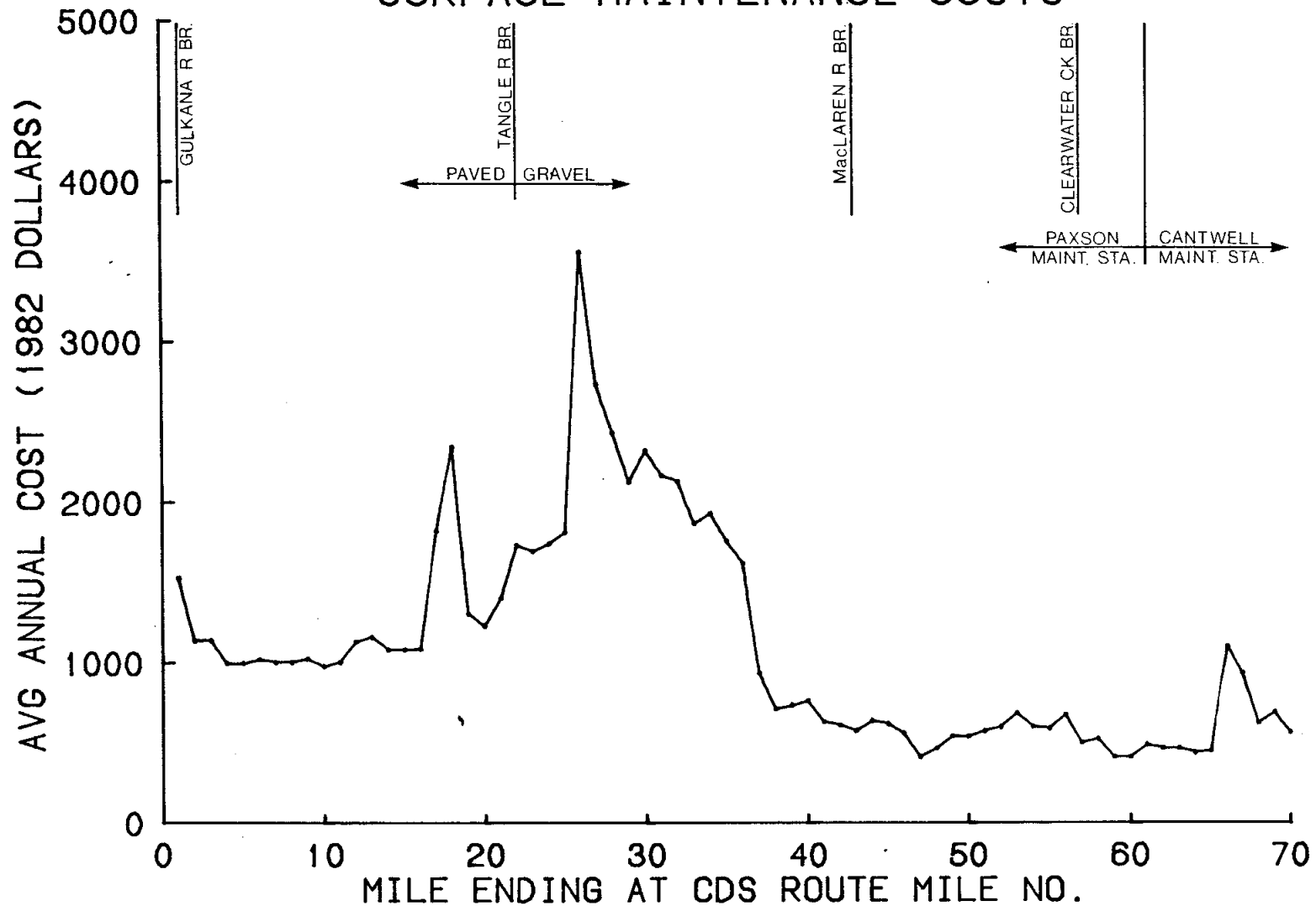


Figure 11



# DENALI HWY FY 74-82 SURFACE MAINTENANCE COSTS

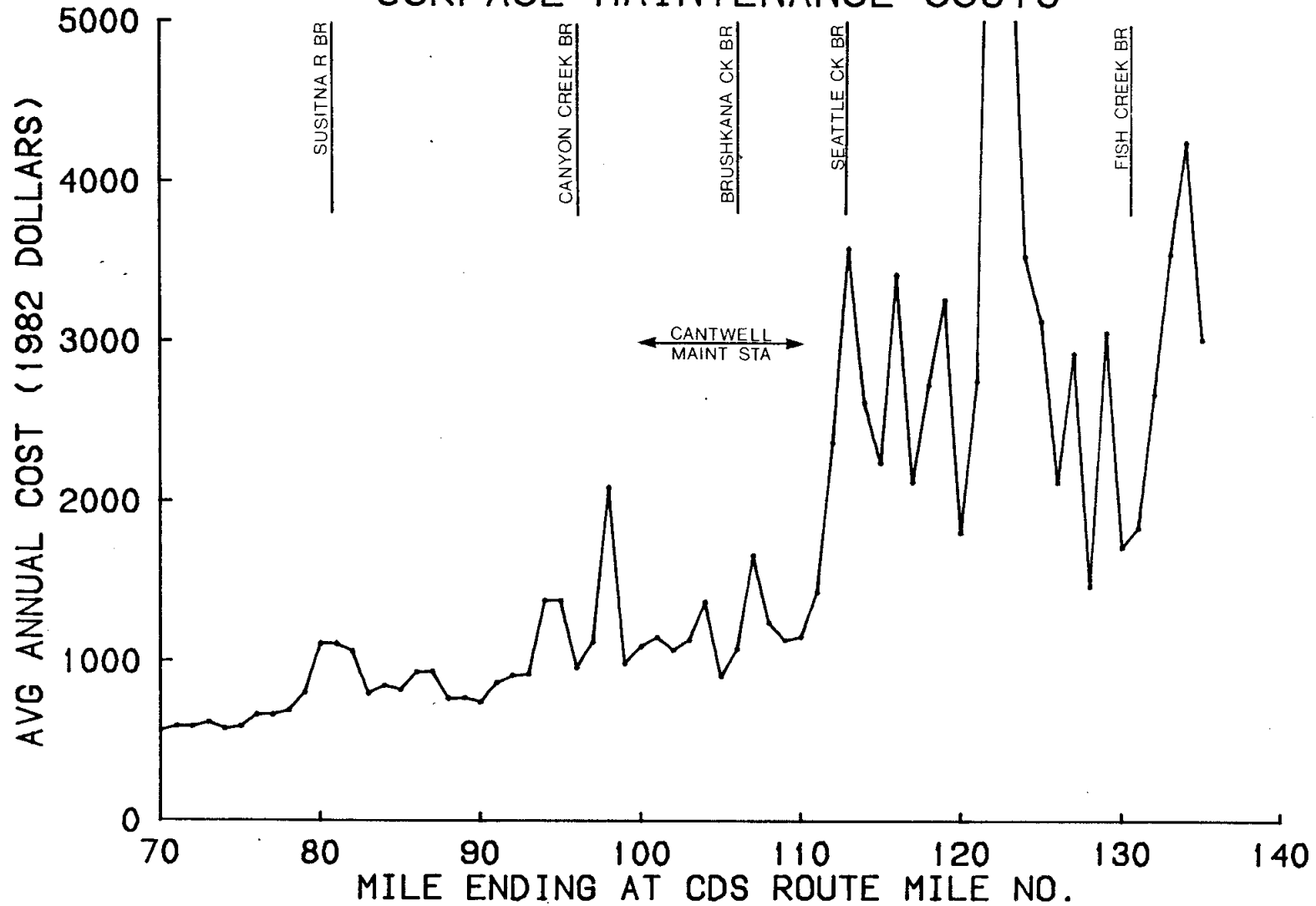


Figure 11 (cont.)

TABLE 8

Denali Highway, CDS Route 140,000  
Average Annual Surface Maintenance Costs FY '74 - '82

<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 1	1,524	29 - 30	2,319	- 59	409	89 - 90	746
- 2	1,138	- 31	2,164	59 - 60	409	- 88	767
- 3	1,138	- 32	2,131	- 61	487	- 89	769
- 4	997	- 33	1,867	- 62	466	90 - 91	864
- 5	997	- 34	1,931	- 63	466	- 92	912
- 6	1,019	- 35	1,757	- 64	438	- 93	920
- 7	1,003	- 36	1,618	- 65	450	- 94	1,380
- 8	1,003	- 37	993	- 66	1,100	- 95	1,381
- 9	1,024	- 38	709	- 67	935	- 96	963
9 - 10	977	- 39	732	- 68	624	- 97	1,123
- 11	1,003	39 - 40	759	- 69	689	- 98	2,087
- 12	1,130	- 41	629	69 - 70	566	- 99	988
- 13	1,158	- 42	610	- 71	590	99 - 100	1,093
- 14	1,081	- 43	574	- 72	590	- 101	1,150
- 15	1,081	- 44	637	- 73	616	- 102	1,069
- 16	1,085	- 45	618	- 74	576	- 103	1,133
- 17	1,820	- 46	557	- 75	591	- 104	1,370
- 18	2,344	- 47	413	- 76	663	- 105	907
- 19	1,303	- 48	465	- 77	663	- 106	1,076
19 - 20	1,227	- 49	540	- 78	689	- 107	1,660
- 21	1,400	49 - 50	540	- 79	803	- 108	1,240
- 22	1,731	- 51	573	79 - 80	1,108	- 109	1,129
- 23	1,692	- 52	598	- 81	1,107	109 - 110	1,152
- 24	1,740	- 53	685	- 82	1,061	- 111	1,429
- 25	1,812	- 54	600	- 83	798	- 112	2,369
- 26	3,556	- 55	588	- 84	844	- 113	3,578
- 27	2,736	- 56	675	- 85	819	- 114	2,621
- 28	2,433	- 57	501	- 86	929	- 115	2,243
- 29	2,124	- 58	523	- 87	935	- 116	3,417

TABLE 8 (cont.)

<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 117	2,122
- 118	2,731
- 119	3,259
119 - 120	1,805
120 - 121	2,752
- 122	7,648
- 123	5,988
- 124	3,530
- 125	3,125
- 126	2,121
- 127	2,923
- 128	1,470
- 129	3,056
129 - 130	1,714
- 131	1,834
- 132	2,673
- 133	3,546
- 134	4,243
- 135	3,016

# ELLIOT HWY FY 78-82 SURFACE MAINTENANCE COSTS

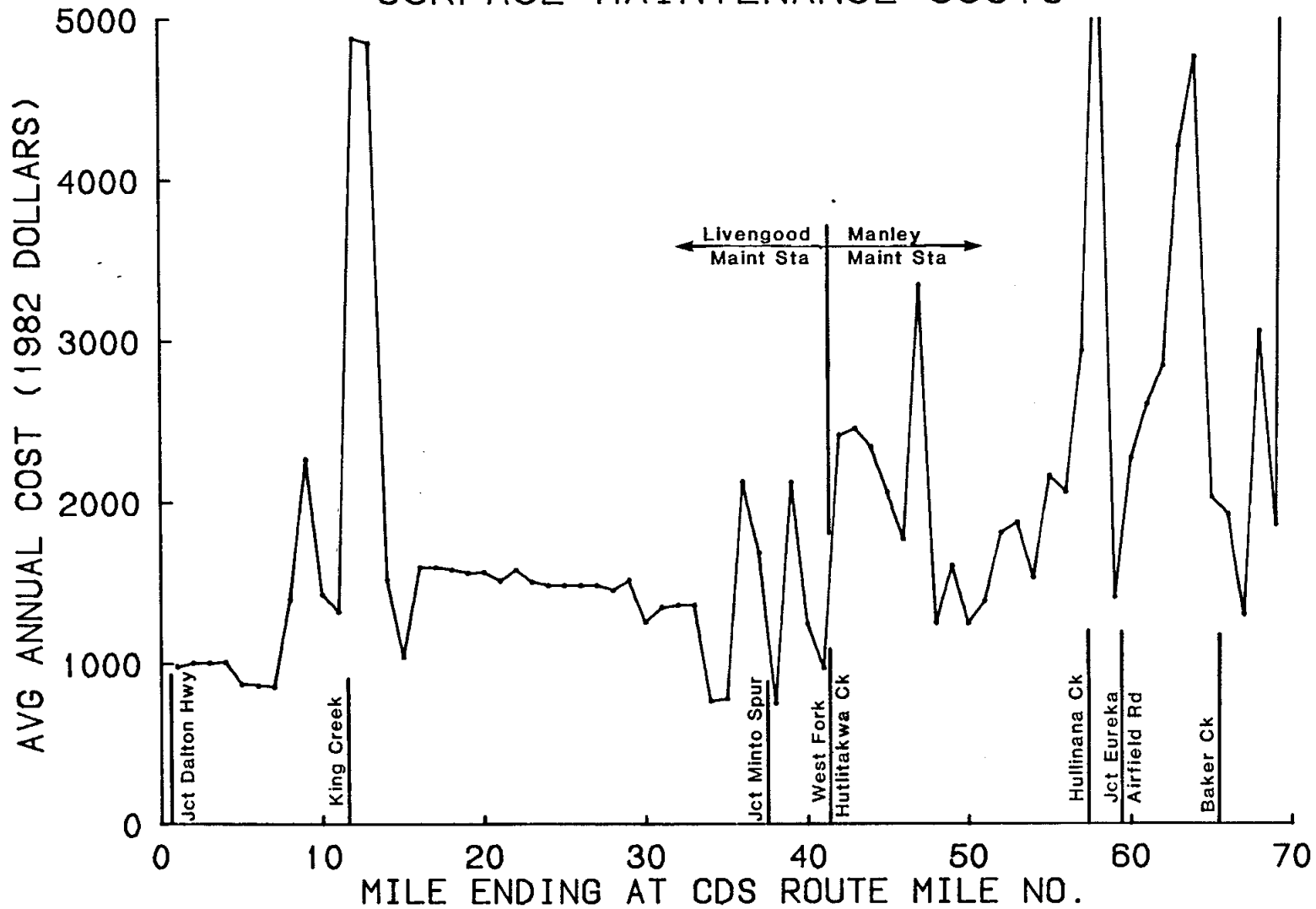


Figure 12

# ELLIOT HWY FY 78-82 SURFACE MAINTENANCE COSTS

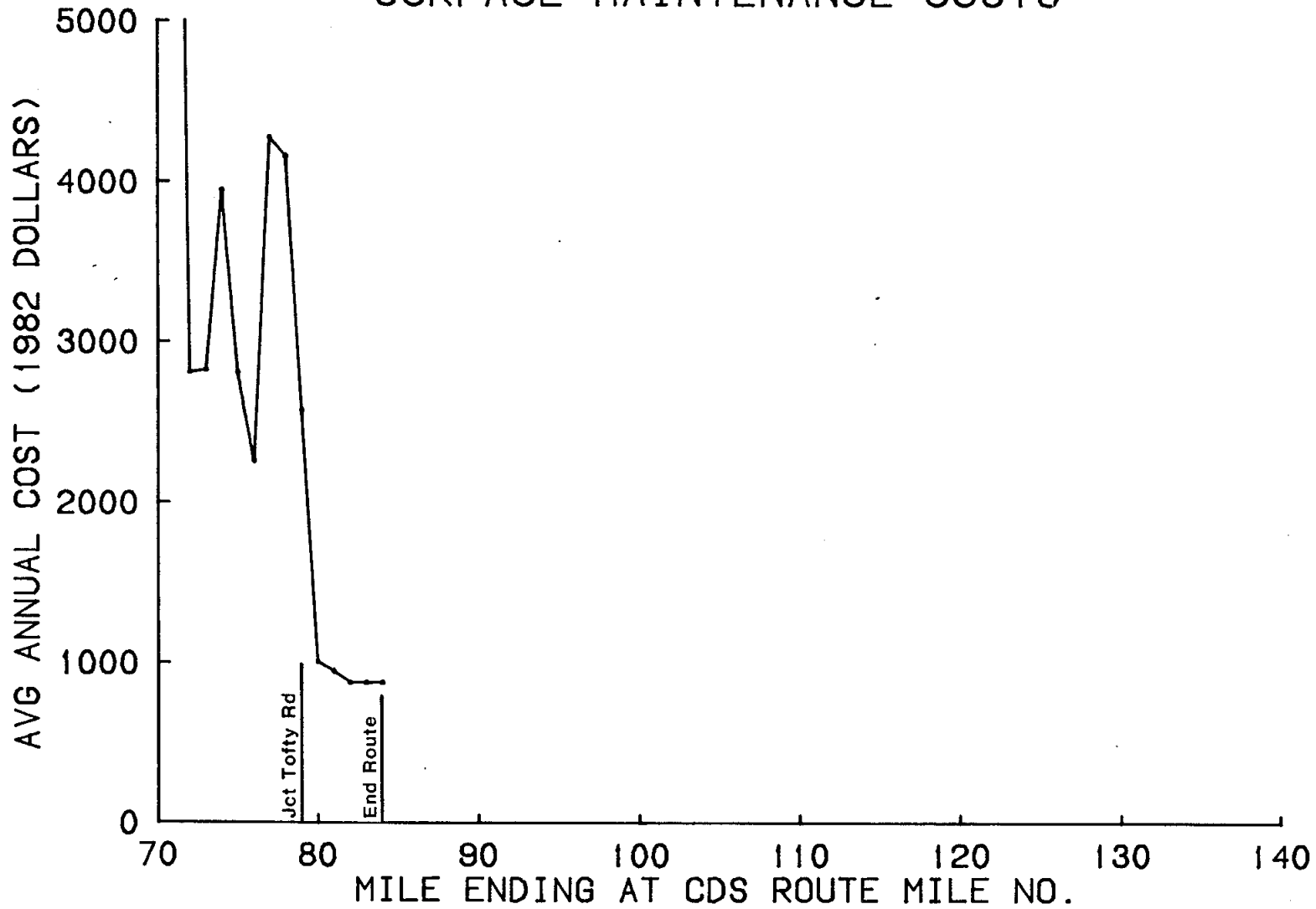


Figure 12 (cont.)

TABLE 9  
Elliot Highway, CDS Route 153,000  
Average Annual Surface Maintenance Costs FY '78 - '82

<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>
0 - 1	982	29 - 30	1,256	- 59	1,411
- 2	1,004	30 - 31	1,347	59 - 60	2,276
- 3	1,004	- 32	1,359	- 61	2,610
- 4	1,016	- 33	1,360	- 62	2,849
- 5	873	- 34	764	- 63	4,211
- 6	863	- 35	781	- 64	4,764
- 7	854	- 36	2,127	- 65	2,036
- 8	1,398	- 37	1,686	- 66	1,924
- 9	2,267	- 38	753	- 67	1,303
9 - 10	1,428	- 39	2,124	- 68	3,065
- 11	1,320	39 - 40	1,243	- 69	1,862
- 12	4,881	- 41	971	69 - 70	10,670
- 13	4,850	- 42	2,417	- 71	12,234
- 14	1,518	- 43	2,461	- 72	2,809
- 15	1,041	- 44	2,346	- 73	2,824
- 16	1,594	- 45	2,064	- 74	3,944
- 17	1,594	- 46	1,771	- 75	2,109
- 18	1,581	- 47	3,347	- 76	2,258
- 19	1,561	- 48	1,253	- 77	4,275
19 - 20	1,565	- 49	1,604	- 78	4,157
- 21	1,512	49 - 50	1,250	- 79	2,573
- 22	1,581	- 51	1,387	79 - 80	1,004
- 23	1,505	- 52	1,811	- 81	947
- 24	1,484	- 53	1,876	- 82	875
- 25	1,484	- 54	1,533	- 83	875
- 26	1,484	- 55	2,166	- 84	875
- 27	1,484	- 56	2,065		
- 28	1,456	- 57	2,938		
- 29	1,517	- 58	5,992		

# PARKS HWY FY 78-82 SURFACE MAINTENANCE COSTS

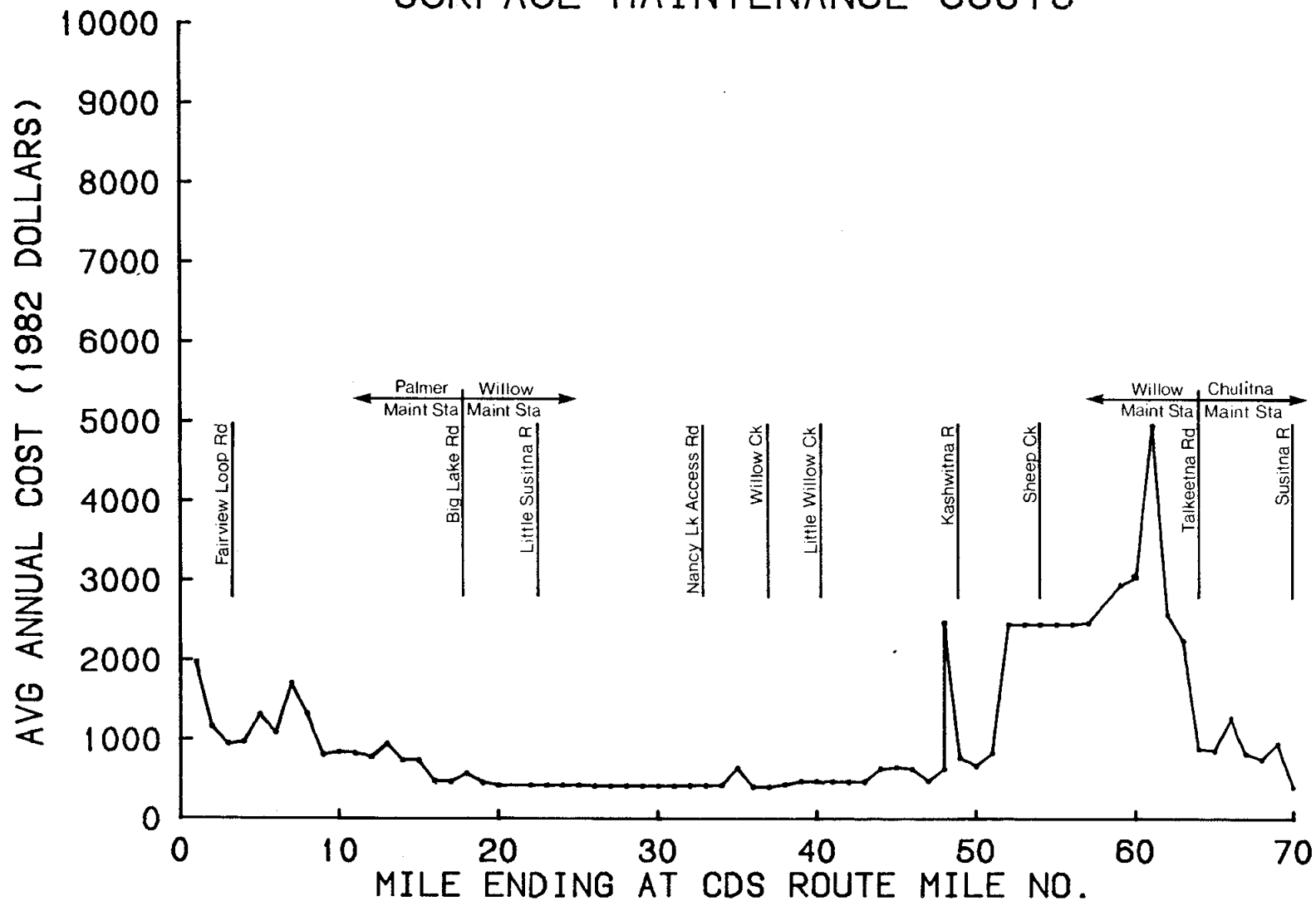


Figure 13

# PARKS HWY FY 78-82 SURFACE MAINTENANCE COSTS

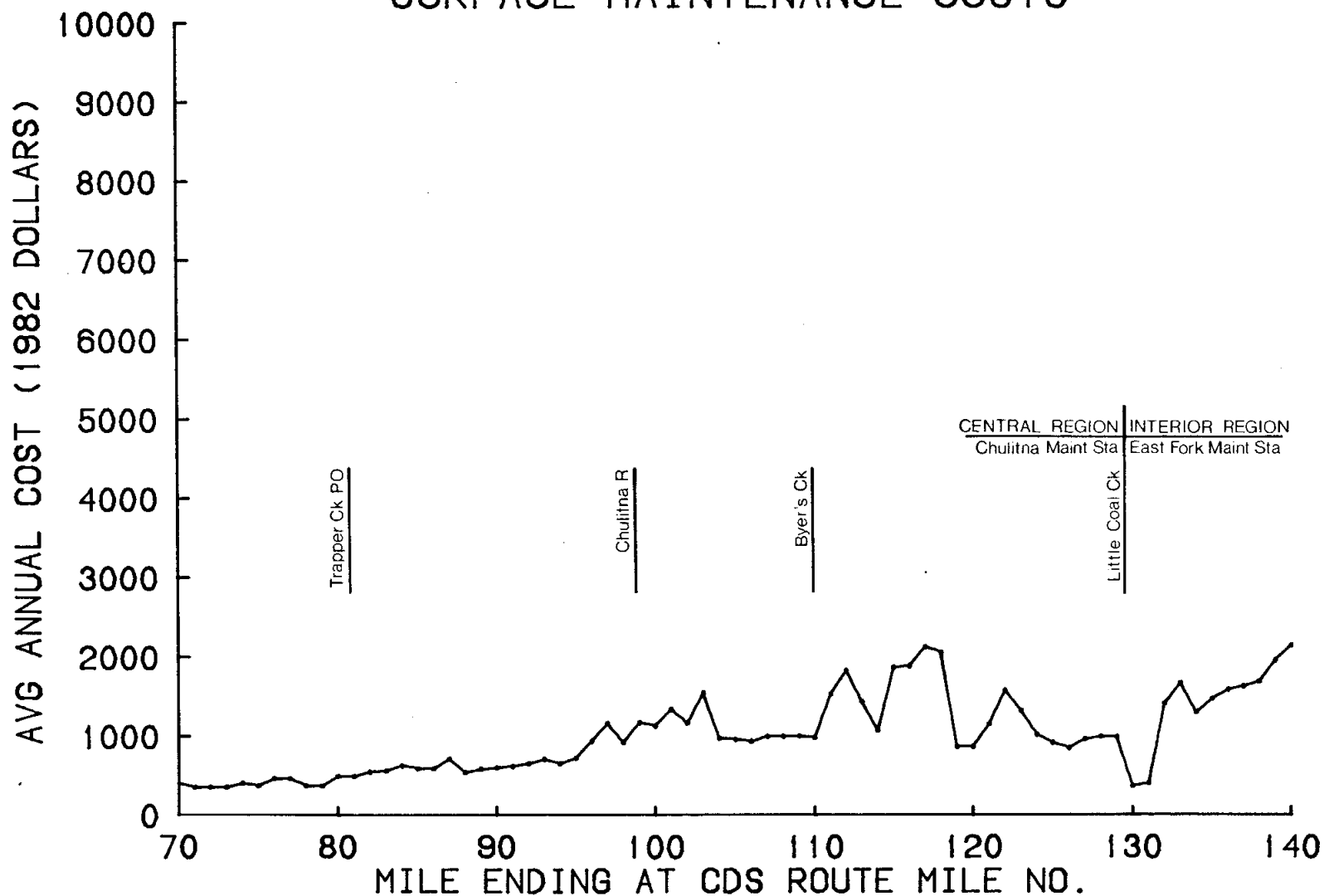


Figure 13 (cont.)



# PARKS HWY FY 78-82 SURFACE MAINTENANCE COSTS

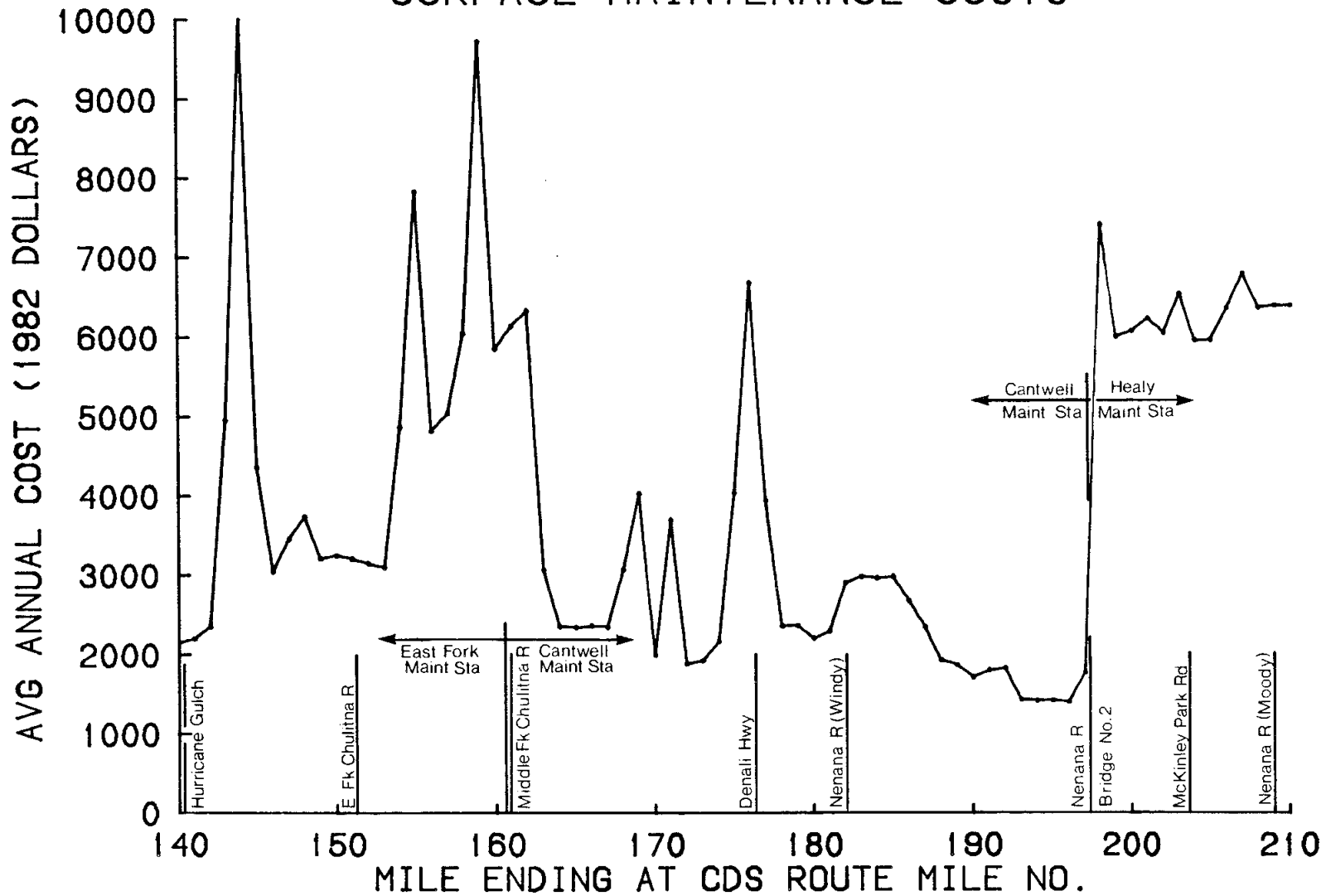


Figure 13 (cont.)

# PARKS HWY FY 78-82 SURFACE MAINTENANCE COSTS

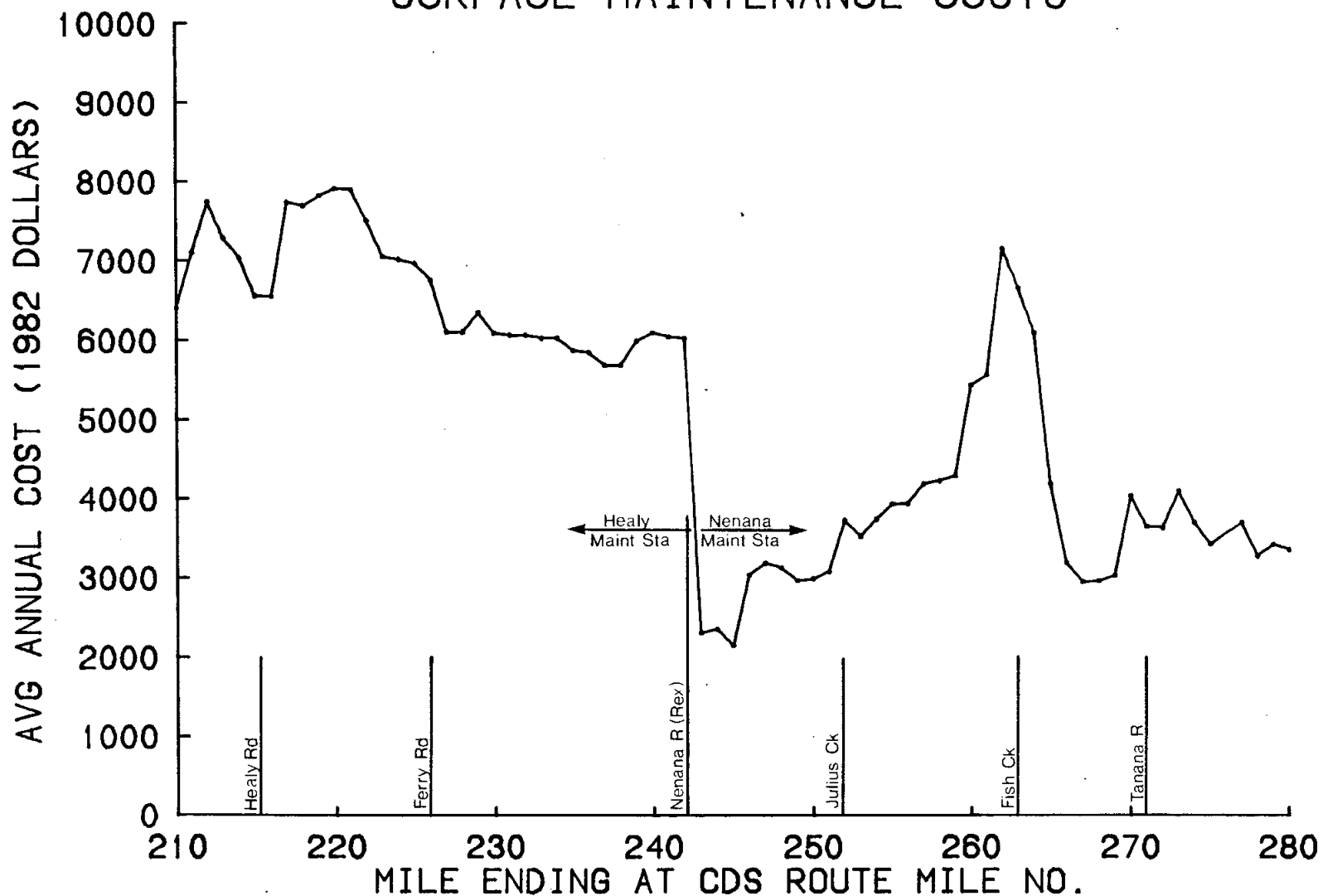


Figure 13 (cont.)

# PARKS HWY FY 78-82 SURFACE MAINTENANCE COSTS

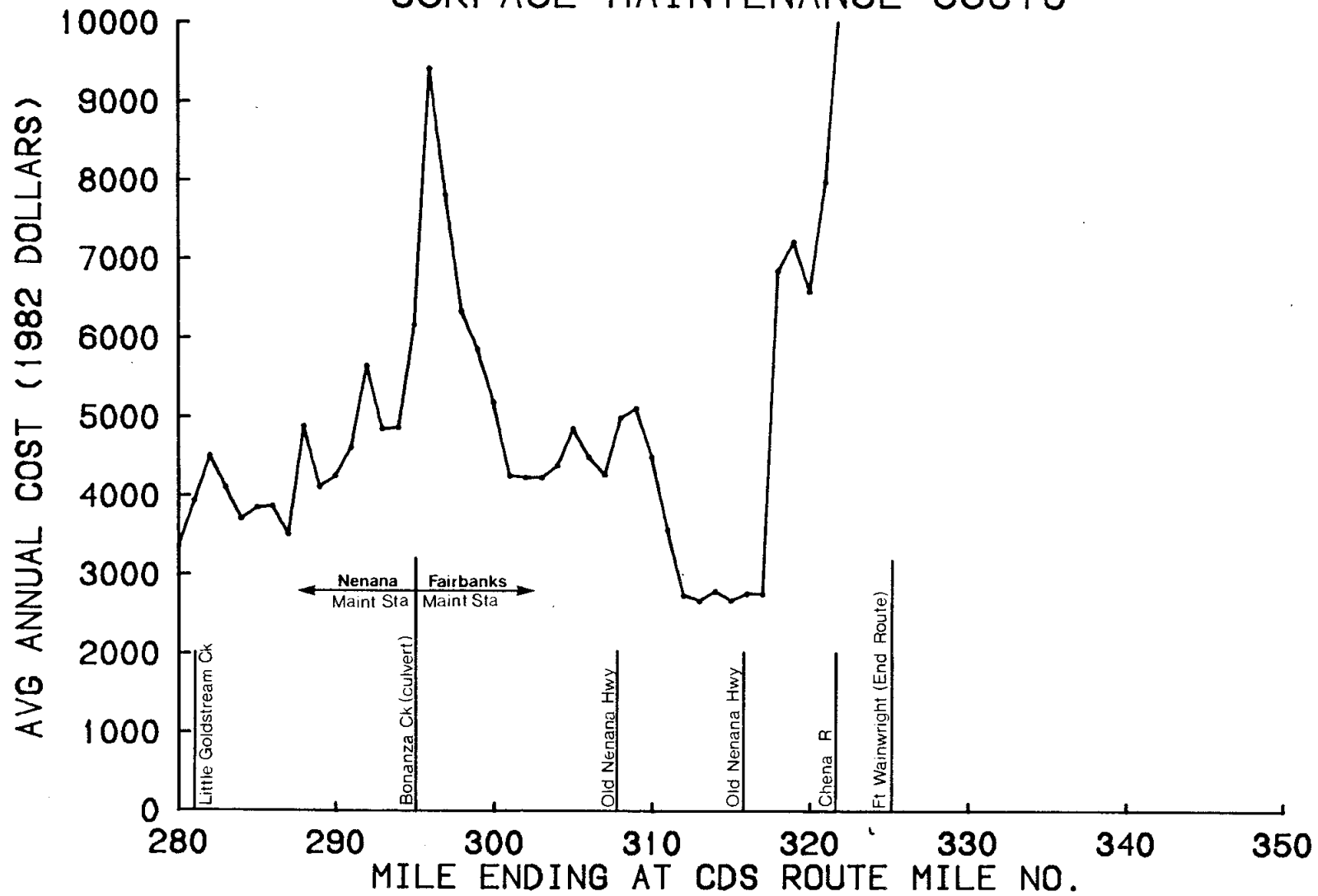


Figure 13 (cont.)

TABLE 10  
Parks Highway, CDS Route 170,000  
Average Annual Surface Maintenance Costs FY '78 - '82

<u>CDS Mile</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost 1982 Dollars</u>
0 - 1	1,968	29 - 30	411	- 59	2,943	89 - 90	598
1 - 2	1,160	30 - 31	411	59 - 60	3,043	- 88	541
2 - 3	944	- 32	416	- 61	4,954	- 89	584
3 - 4	969	- 33	416	- 62	2,573	- 91	616
4 - 5	1,312	- 34	421	- 63	2,244	- 92	650
5 - 6	1,084	- 35	635	- 64	879	- 93	704
6 - 7	1,698	- 36	398	- 65	855	- 94	650
7 - 8	1,317	- 37	402	- 66	1,273	- 95	720
8 - 9	807	- 38	428	- 67	819	- 96	935
9 - 10	838	- 39	472	- 68	745	- 97	1,158
- 11	825	39 - 40	472	- 69	950	- 98	923
- 12	778	- 41	472	69 - 70	399	- 99	1,167
- 13	945	- 42	467	- 71	349	99 - 100	1,127
- 14	739	- 43	467	- 72	349	- 101	1,337
- 15	737	- 44	633	- 73	349	- 102	1,160
- 16	478	- 45	650	- 74	401	- 103	1,543
- 17	465	- 46	631	- 75	369	- 104	969
- 18	568	- 47	481	- 76	458	- 105	956
- 19	455	- 48	631	- 77	458	- 106	933
19 - 20	421	- 49	771	- 78	371	- 107	995
- 21	421	49 - 50	665	- 79	371	- 108	995
- 22	421	- 51	831	79 - 80	491	- 109	998
- 23	421	- 52	2,449	- 81	491	109 - 110	983
- 24	421	- 53	2,450	- 82	545	- 111	1,532
- 25	421	- 54	2,450	- 83	558	- 112	1,825
- 26	411	- 55	2,450	- 84	626	- 113	1,434
- 27	411	- 56	2,450	- 85	590	- 114	1,070
- 28	411	- 57	2,467	- 86	590	- 115	1,871
- 29	411	- 58	2,467	- 87	712	- 116	1,885

TABLE 10 (cont.)

<u>CDS Mile</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost 1982 Dollars</u>
- 117	2,125	- 146	3,047	- 175	4,034	- 204	5,964
- 118	2,060	- 147	3,455	- 176	6,676	- 205	5,967
- 119	865	- 148	3,742	- 177	3,934	- 206	6,369
119 - 120	865	- 149	3,208	- 178	2,357	- 207	6,799
- 121	1,149	149 - 150	3,246	- 179	2,360	- 208	6,376
- 122	1,576	- 151	3,203	179 - 180	2,204	- 209	6,400
- 123	1,317	- 152	3,144	- 181	2,294	209 - 210	6,398
- 124	1,017	- 153	3,094	- 182	2,901	- 211	7,098
- 125	913	- 154	4,868	- 183	2,977	- 212	7,737
- 126	847	- 155	7,830	- 184	2,963	- 213	7,284
- 127	961	- 156	4,822	- 185	2,983	- 214	7,035
- 128	992	- 157	5,043	- 186	2,676	- 215	6,559
- 129	992	- 158	6,049	- 187	2,348	- 216	6,554
129 - 130	366	- 159	9,722	- 188	1,929	- 217	7,736
- 131	398	159 - 160	5,854	- 189	1,872	- 218	7,693
- 132	1,408	- 161	6,137	189 - 190	1,715	- 219	7,819
- 133	1,671	- 162	6,333	- 191	1,804	219 - 220	7,909
- 134	1,302	- 163	3,066	- 192	1,831	- 221	7,898
- 135	1,468	- 164	2,355	- 193	1,431	- 222	7,504
- 136	1,587	- 165	2,344	- 194	1,416	- 223	7,052
- 137	1,627	- 166	2,364	- 195	1,422	- 224	7,014
- 138	1,690	- 167	2,345	- 196	1,401	- 225	6,964
- 139	1,956	- 168	3,073	- 197	1,773	- 226	6,759
139 - 140	2,145	- 169	4,028	- 198	7,413	- 227	6,103
- 141	2,199	169 - 170	1,988	- 199	6,007	- 228	6,103
- 142	2,357	- 171	3,696	199 - 200	6,081	- 229	6,348
- 143	4,955	- 172	1,878	- 201	6,235	229 - 230	6,092
- 144	10,014	- 173	1,920	- 202	6,057	- 231	6,064
- 145	4,359	- 174	2,162	- 203	6,546	- 232	6,064

TABLE 10 (cont.)

<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 233	6,027	- 262	7,156	- 291	4,615	319 - 320	6,591
- 234	6,027	- 263	6,655	- 292	5,646	- 321	7,983
- 235	5,871	- 264	6,088	- 293	4,853	- 322	10,521
- 236	5,844	- 265	4,188	- 294	4,872	- 323	15,318
- 237	5,683	- 266	3,193	- 295	6,165	- 324	13,757
- 238	5,683	- 267	2,949	- 296	9,415	- 325	14,161
- 239	5,985	- 268	2,958	- 297	7,810		
239 - 240	6,089	- 269	3,028	- 298	6,337		
- 241	6,038	269 - 270	4,037	- 299	5,863		
- 242	6,022	- 271	3,652	299 - 300	5,192		
- 243	2,302	- 272	3,635	- 301	4,249		
- 244	2,345	- 273	4,100	- 302	4,229		
- 245	2,143	- 274	3,700	- 303	4,229		
- 246	3,028	- 275	3,428	- 304	4,380		
- 247	3,177	- 276	3,460	- 305	4,847		
- 248	3,119	- 277	3,697	- 306	4,489		
- 249	2,959	- 278	3,277	- 307	4,271		
249 - 250	2,984	- 279	3,421	- 308	4,992		
- 251	3,075	279 - 280	3,355	- 309	5,112		
- 252	3,723	- 281	3,934	309 - 310	4,495		
- 253	3,523	- 282	4,505	- 311	3,570		
- 254	3,737	- 283	4,108	- 312	2,735		
- 255	3,928	- 284	3,708	- 313	2,666		
- 256	3,936	- 285	3,851	- 314	2,787		
- 257	4,185	- 286	3,869	- 315	2,668		
- 258	4,225	- 287	3,516	- 316	2,757		
- 259	4,288	- 288	4,880	- 317	2,750		
259 - 260	5,431	- 289	4,115	- 318	6,851		
- 261	5,562	289 - 290	4,253	- 319	7,215		

# RICHARDSON HWY FY 74-82 SURFACE MAINTENANCE COSTS

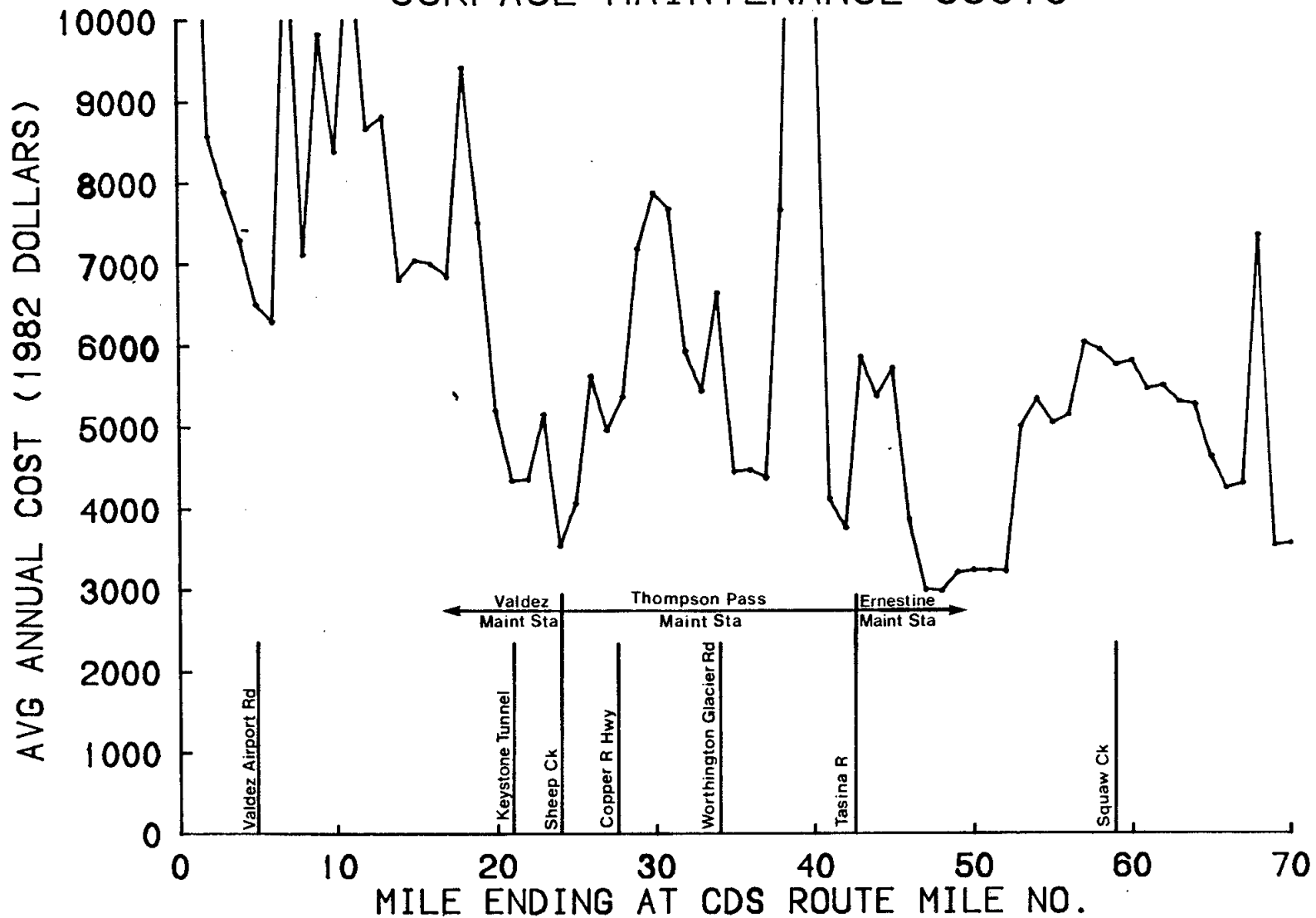


Figure 14

# RICHARDSON HWY FY 74-82 SURFACE MAINTENANCE COSTS

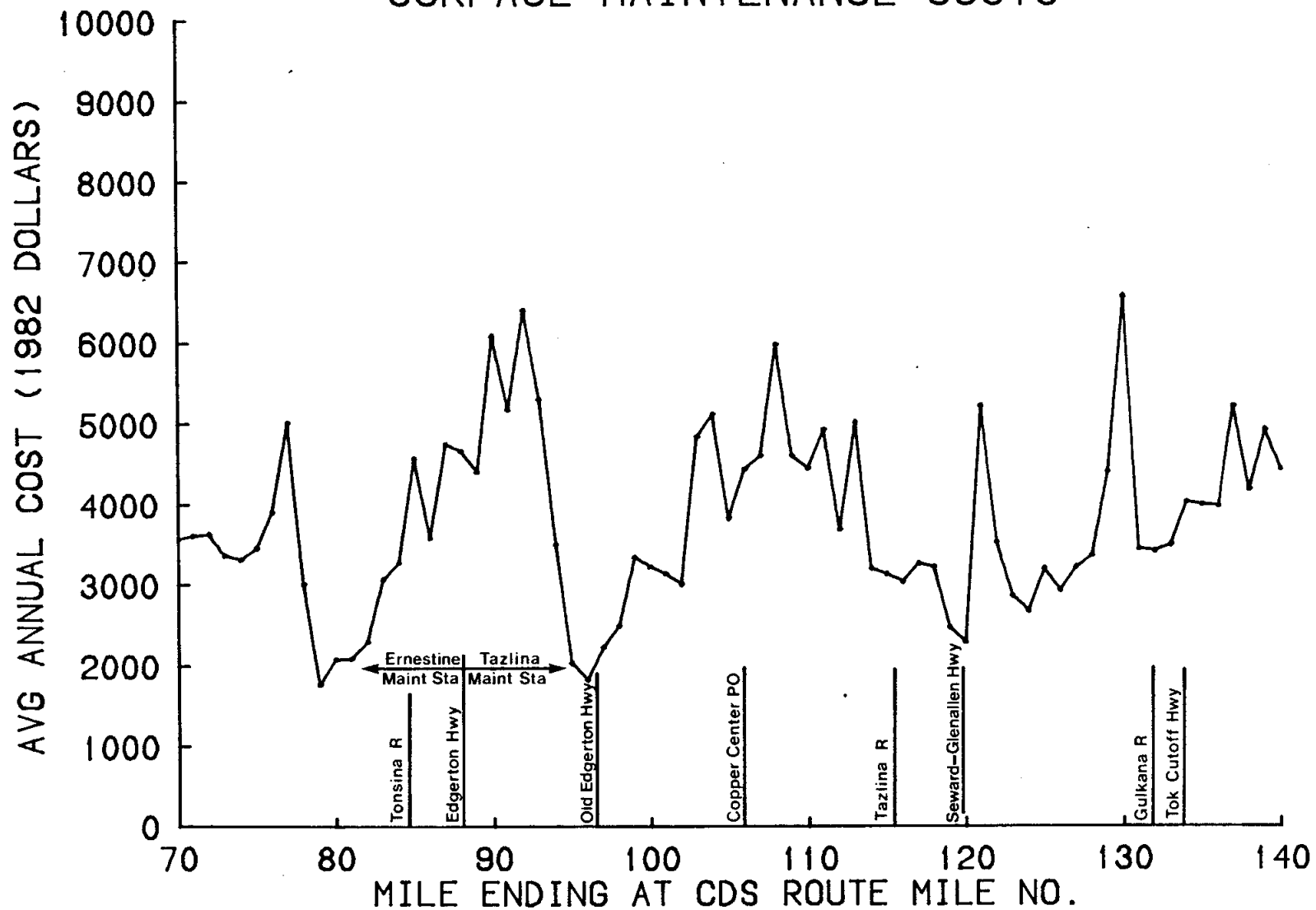


Figure 14 (cont.)



# RICHARDSON HWY FY 74-82 SURFACE MAINTENANCE COSTS

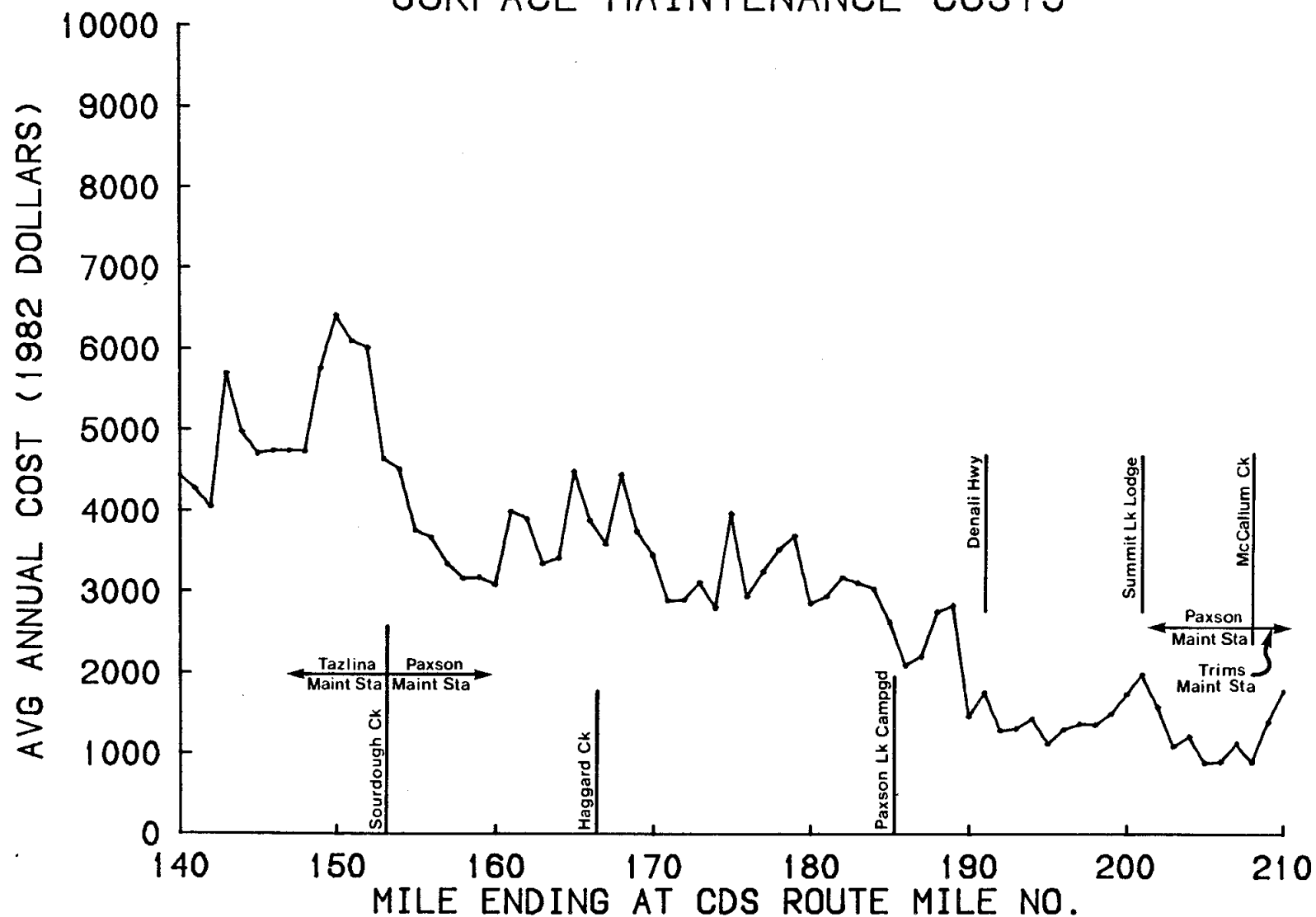


Figure 14 (cont.)

# RICHARDSON HWY FY 74-82 SURFACE MAINTENANCE COSTS

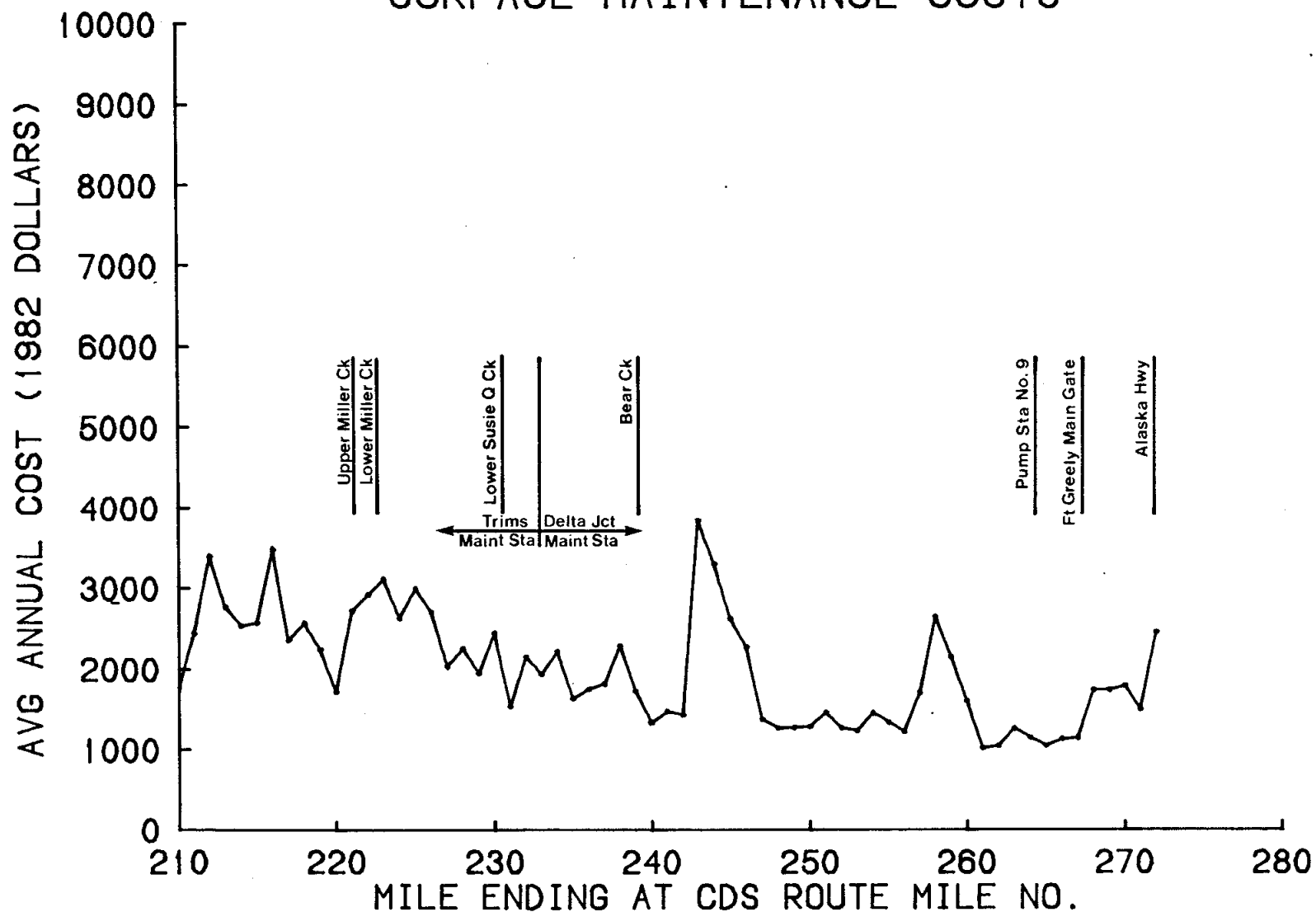


Figure 14 (cont.)

TABLE 11

Richardson Highway, CDS Route 190,000  
Average Annual Maintenance Costs FY '74 - '82

<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 1	13,408	29 - 30	7,874	- 59	5,763	- 88	4,663
- 2	8,581	30 - 31	7,675	59 - 60	5,813	- 89	4,411
- 3	7,890	- 32	5,934	- 61	5,473	89 - 90	6,090
- 4	7,296	- 33	5,446	- 62	5,512	- 91	5,179
- 5	6,511	- 34	6,646	- 63	5,317	- 92	6,407
- 6	6,298	- 35	4,453	- 64	5,281	- 93	5,303
- 7	11,445	- 36	4,474	- 65	4,643	- 94	3,505
- 8	7,121	- 37	4,375	- 66	4,250	- 95	2,034
- 9	9,828	- 38	7,662	- 67	4,311	- 96	1,828
9 - 10	8,385	- 39	14,111	- 68	7,355	- 97	2,234
- 11	11,160	39 - 40	13,090	- 69	3,550	- 98	2,500
- 12	8,667	- 41	4,112	69 - 70	3,571	- 99	3,344
- 13	8,815	- 42	3,759	- 71	3,609	99 - 100	3,226
- 14	6,809	- 43	5,860	- 72	3,632	- 101	3,142
- 15	7,042	- 44	5,380	- 73	3,367	- 102	3,008
- 16	7,000	- 45	5,726	- 74	3,316	- 103	4,837
- 17	6,844	- 46	3,864	- 75	3,455	- 104	5,117
- 18	9,418	- 47	3,000	- 76	3,903	- 105	3,830
- 19	7,508	- 48	2,985	- 77	5,013	- 106	4,439
19 - 20	5,207	- 49	3,212	- 78	3,012	- 107	4,607
- 21	4,339	49 - 50	3,241	- 79	1,767	- 108	5,981
- 22	4,357	- 51	3,235	79 - 80	2,077	- 109	4,608
- 23	5,157	- 52	3,224	- 81	2,085	109 - 110	4,449
- 24	3,538	- 53	5,013	- 82	2,293	- 111	4,923
- 25	4,063	- 54	5,347	- 83	3,066	- 112	3,689
- 26	5,626	- 55	5,052	- 84	3,278	- 113	5,019
- 27	4,965	- 56	5,148	- 85	4,575	- 114	3,202
- 28	5,377	- 57	6,039	- 86	3,591	- 115	3,133
- 29	7,194	- 58	5,944	- 87	4,747	- 116	3,039

TABLE 11 (cont.)

<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 117	3,262	- 146	4,739	- 175	3,963	- 204	1,211
- 118	3,222	- 147	4,741	- 176	2,938	- 205	888
- 119	2,472	- 148	4,734	- 177	3,241	- 206	899
119 - 120	2,289	- 149	5,756	- 178	3,514	- 207	1,128
- 121	5,216	149 - 150	6,414	- 179	3,687	- 208	898
- 122	3,528	- 151	6,695	179 - 180	2,851	- 209	1,389
- 123	2,862	- 152	6,012	- 181	2,934	209 - 210	1,775
- 124	2,678	- 153	4,642	- 182	3,168	- 211	2,441
- 125	3,201	- 154	4,516	- 183	3,103	- 212	3,397
- 126	2,830	- 155	3,753	- 184	3,032	- 213	2,766
- 127	3,222	- 156	3,668	- 185	2,625	- 214	2,536
- 128	3,362	- 157	3,340	- 186	2,091	- 215	2,575
- 129	4,411	- 158	3,157	- 187	2,199	- 216	3,486
129 - 130	6,579	- 159	3,172	- 188	2,752	- 217	2,361
- 131	3,445	159 - 160	3,085	- 189	2,831	- 218	2,568
- 132	3,418	- 161	3,988	189 - 190	<u>1,459</u>	- 219	2,240
- 133	3,498	- 162	3,897	- 191	1,750	219 - 220	1,718
- 134	4,028	- 163	3,345	- 192	1,285	- 221	2,717
- 135	4,000	- 164	3,411	- 193	1,307	- 222	2,918
- 136	3,982	- 165	4,482	- 194	1,428	- 223	3,114
- 137	5,215	- 166	3,880	- 195	1,119	- 224	2,629
- 138	4,183	- 167	3,587	- 196	1,294	- 225	2,993
- 139	4,930	- 168	4,447	- 197	1,366	- 226	2,699
139 - 140	4,437	- 169	3,742	- 198	1,356	- 227	2,033
- 141	4,276	169 - 170	3,455	- 199	1,488	- 228	2,253
- 142	4,050	- 171	2,886	199 - 200	1,736	- 229	1,947
- 143	5,698	- 172	2,894	- 201	1,980	229 - 230	2,445
- 144	4,979	- 173	3,108	- 202	1,581	- 231	1,538
- 145	4,708	- 174	2,795	- 203	1,089	- 232	2,156

TABLE 11 (cont.)

<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 233	1,939	- 262	1,050
- 234	2,219	- 263	1,261
- 235	1,640	- 264	1,147
- 236	1,754	- 265	1,049
- 237	1,817	- 266	1,726
- 238	2,287	- 267	1,145
- 239	1,133	- 268	1,741
239 - 240	1,337	- 269	1,741
240 - 241	1,473	269 - 270	1,795
- 242	1,432	- 271	1,499
- 243	3,842	- 272	<u>2,454</u>
- 244	3,305		
- 245	2,626		
- 246	2,268		
- 247	1,372		
- 248	1,267		
- 249	1,271		
249 - 250	1,286		
- 251	1,457		
- 252	1,270		
- 253	1,234		
- 254	1,456		
- 255	1,340		
- 256	1,227		
- 257	1,711		
- 258	2,647		
- 259	2,154		
259 - 260	1,609		
- 261	1,020		

# SEWARD-GLENALLEN HWY FY 77-82 SURFACE MAINTENANCE COSTS

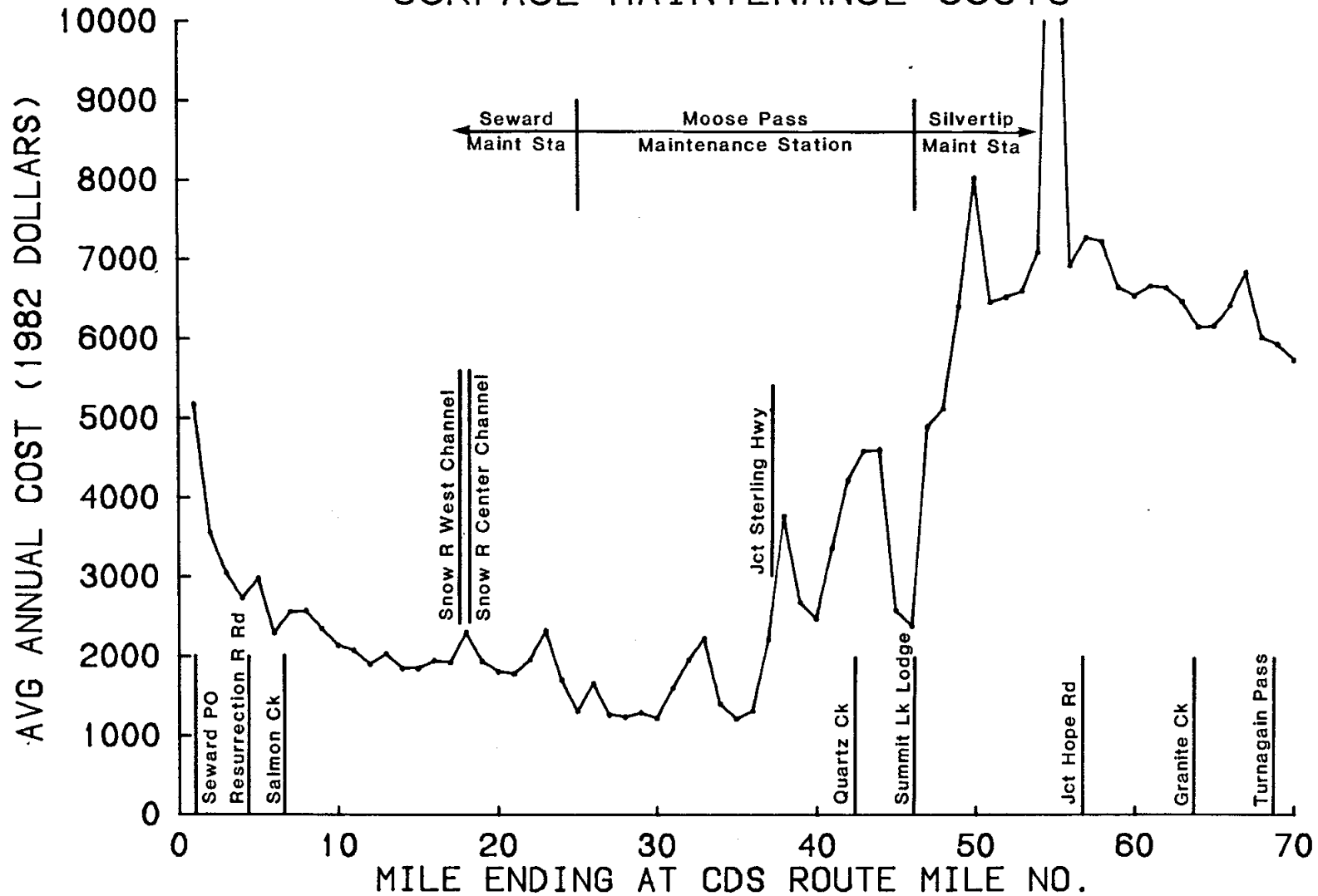


Figure 15

# SEWARD-GLENALLEN HWY FY 77-82 SURFACE MAINTENANCE COSTS

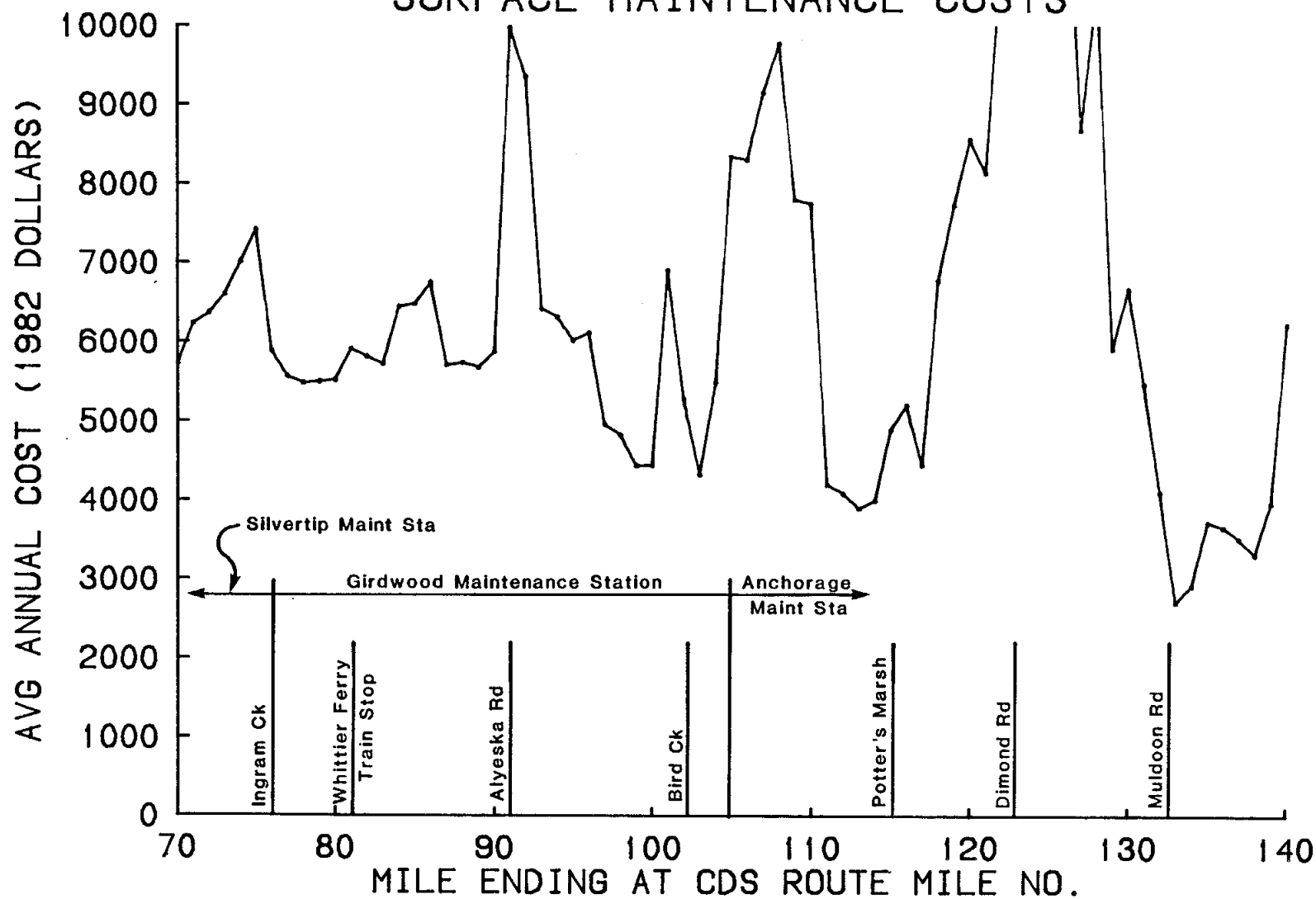


Figure 15 (cont.)

# SEWARD-GLENALLEN HWY FY 77-82 SURFACE MAINTENANCE COSTS

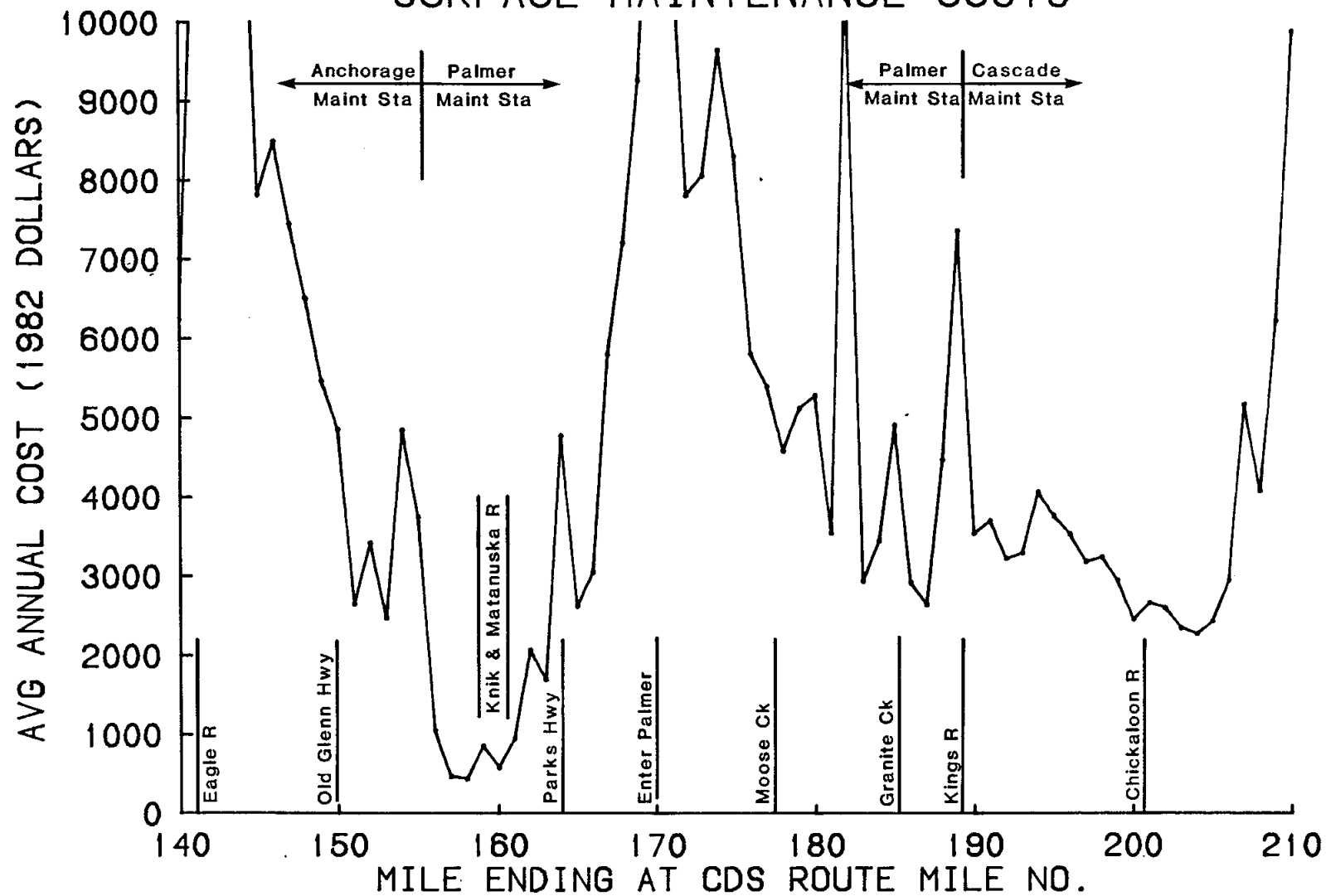


Figure 15 (cont.)



# SEWARD-GLENALLEN HWY FY 77-82 SURFACE MAINTENANCE COSTS

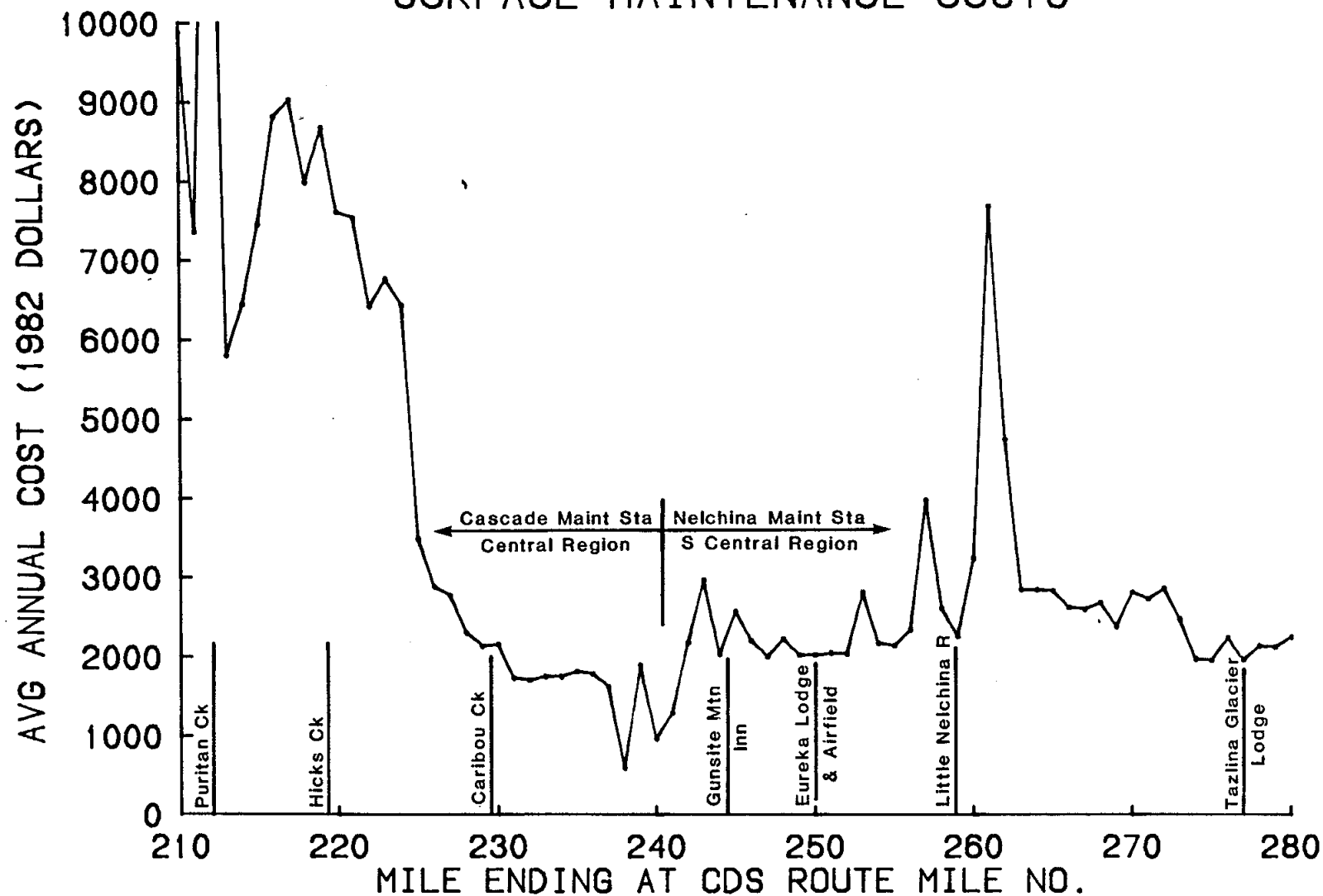


Figure 15 (Cont.)

# SEWARD-GLENALLEN HWY FY 77-82 SURFACE MAINTENANCE COSTS

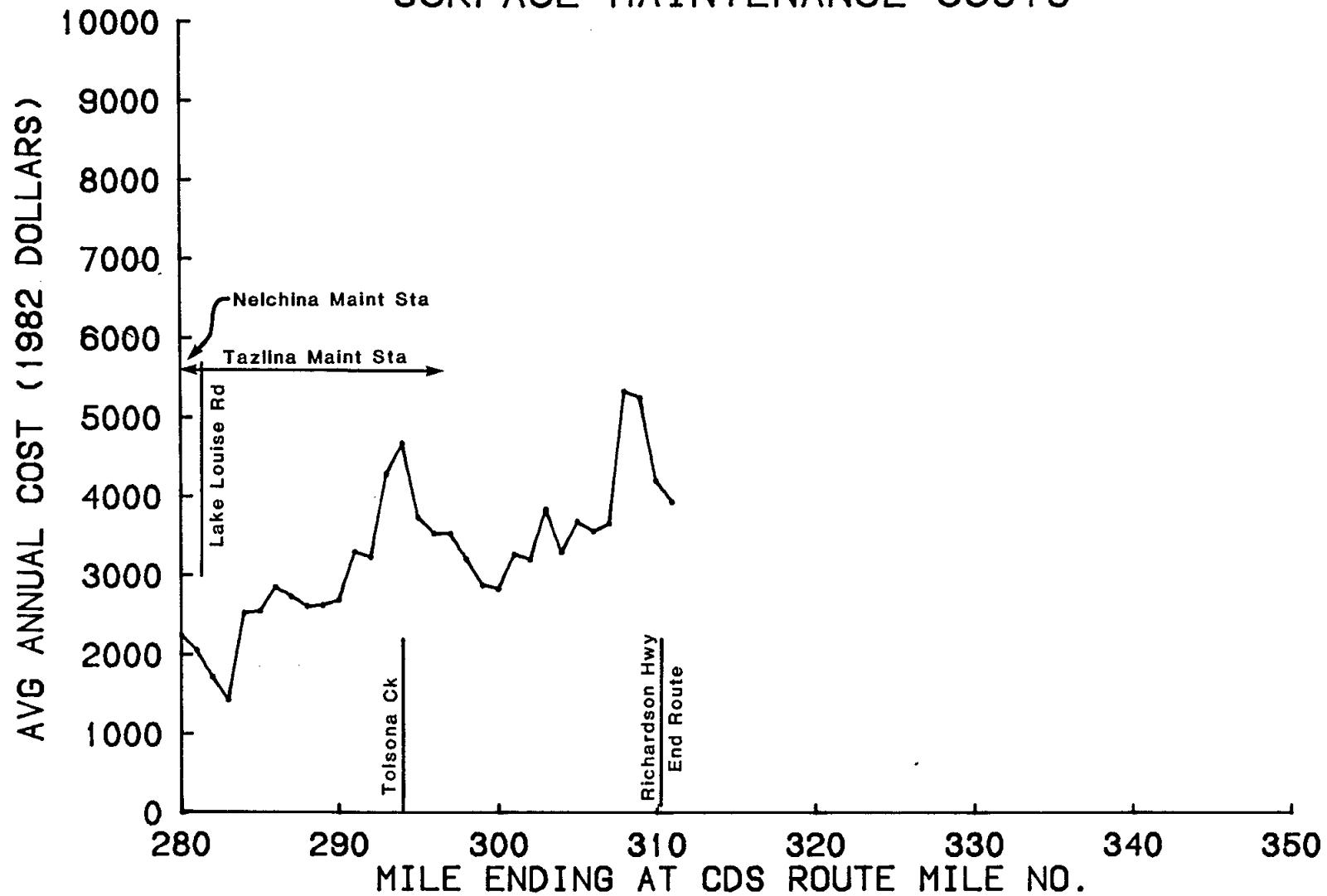


Figure 15 (Continued)

TABLE 12  
Seward-Glenallen Highway, CDS Route 130,000  
Average Annual Surface Maintenance Costs FY '77 - '82

<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Mile</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 1	5,174	29 - 30	1,219	- 59	6,627	- 88	5,741
- 2	3,558	- 31	1,598	59 - 60	6,516	- 89	5,681
- 3	3,051	- 32	1,954	- 61	6,638	89 - 90	5,897
- 4	2,734	- 33	2,230	- 62	6,619	- 91	9,981
- 5	2,982	- 34	1,401	- 63	6,452	- 92	9,361
- 6	2,297	- 35	1,211	- 64	6,130	- 93	6,425
- 7	2,560	- 36	1,311	- 65	6,144	- 94	6,321
- 8	2,574	- 37	2,214	- 66	6,401	- 95	6,025
- 9	2,350	- 38	3,766	- 67	6,815	- 96	6,119
9 - 10	2,136	- 39	2,682	- 68	5,999	- 97	4,964
- 11	2,073	39 - 40	2,468	- 69	5,913	- 98	4,825
- 12	1,897	- 41	3,362	69 - 70	5,715	- 99	4,443
- 13	2,030	- 42	4,217	- 71	6,229	99 - 100	4,445
- 14	1,847	- 43	4,591	- 72	6,364	- 101	6,910
- 15	1,845	- 44	4,603	- 73	6,600	- 102	5,289
- 16	1,944	- 45	2,577	- 74	7,013	- 103	4,333
- 17	1,919	- 46	2,378	- 75	7,416	- 104	5,494
- 18	2,295	- 47	4,893	- 76	5,887	- 105	8,350
- 19	1,935	- 48	5,119	- 77	5,564	- 106	8,313
19 - 20	1,806	- 49	6,406	- 78	5,482	- 107	9,163
- 21	1,783	49 - 50	8,024	- 79	5,497	- 108	9,781
- 22	1,961	- 51	6,463	79 - 80	5,517	- 109	7,801
- 23	2,323	- 52	6,525	- 81	5,911	109 - 110	7,748
- 24	1,705	- 53	6,603	- 82	5,813	- 111	4,202
- 25	1,309	- 54	7,090	- 83	5,720	- 112	4,085
- 26	1,656	- 55	13,831	- 84	6,445	- 113	3,899
- 27	1,266	- 56	6,899	- 85	6,481	- 114	4,001
- 28	1,237	- 57	7,246	- 86	6,753	- 115	4,895
- 29	1,294	- 58	7,202	- 87	5,711	- 116	5,209

TABLE 12 (cont.)

<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 117	4,453	- 146	8,492	- 175	8,304	- 204	2,268
- 118	6,786	- 147	7,453	- 176	5,805	- 205	2,430
- 119	7,743	- 148	6,511	- 177	5,398	- 206	2,947
119 - 120	8,573	- 149	5,466	- 178	4,585	- 207	5,171
- 121	8,152	149 - 150	4,855	- 179	5,115	- 208	4,082
- 122	11,104	- 151	2,650	179 - 180	5,282	- 209	6,230
- 123	11,730	- 152	3,420	- 181	3,543	209 - 210	9,876
- 124	19,780	- 153	2,468	- 182	10,817	- 211	7,362
- 125	19,922	- 154	4,847	- 183	2,937	- 212	15,667
- 126	12,359	- 155	3,750	- 184	3,444	- 213	5,806
- 127	8,692	- 156	1,054	- 185	4,904	- 214	6,449
- 128	10,530	- 157	471	- 186	2,917	- 215	7,454
- 129	5,921	- 158	442	- 187	2,641	- 216	8,815
129 - 130	6,673	- 159	860	- 188	4,473	- 217	9,031
- 131	5,483	159 - 160	586	- 189	7,359	- 218	7,986
- 132	4,107	- 161	956	189 - 190	3,543	- 219	8,682
- 133	2,712	- 162	2,071	- 191	3,696	219 - 220	7,610
- 134	2,922	- 163	1,703	- 192	3,222	- 221	7,536
- 135	3,725	- 164	4,774	- 193	3,292	- 222	6,424
- 136	3,661	- 165	2,624	- 194	4,063	- 223	6,763
- 137	3,519	- 166	3,049	- 195	3,763	- 224	6,435
- 138	3,315	- 167	5,808	- 196	3,528	- 225	3,492
- 139	3,971	- 168	7,215	- 197	3,183	- 226	2,884
139 - 140	6,235	- 169	9,262	- 198	3,238	- 227	2,772
- 141	11,462	169 - 170	13,006	- 199	2,944	- 228	2,305
- 142	14,147	- 171	11,707	199 - 200	2,454	- 229	2,136
- 143	14,263	- 172	7,812	- 201	2,662	229 - 230	2,161
- 144	13,459	- 173	8,056	- 202	2,596	- 231	1,737
- 145	7,816	- 174	9,640	- 203	2,345	- 232	1,709

TABLE 12 (cont.)

<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>
- 233	1,755	- 261	7,692	- 289	2,625
- 234	1,755	- 262	4,746	289 - 290	2,692
- 235	1,819	- 263	2,844	- 291	3,302
- 236	1,788	- 264	2,838	- 292	3,234
- 237	1,626	- 265	2,830	- 293	4,287
- 238	596	- 266	2,622	- 294	4,674
- 239	1,894	- 267	2,597	- 295	3,736
239 - 240	965	- 268	2,681	- 296	3,531
- 241	1,290	- 269	2,375	- 297	3,530
- 242	2,182	269 - 270	2,811	- 298	3,206
- 243	2,968	- 271	2,732	- 299	2,876
- 244	2,030	- 272	2,857	299 - 300	2,828
- 245	2,568	- 273	2,473	- 301	3,266
- 246	2,198	- 274	1,967	- 302	3,198
- 247	1,998	- 275	1,950	- 303	3,839
- 248	2,217	- 276	2,242	- 304	3,302
- 249	2,022	- 277	1,960	- 305	3,683
249 - 250	2,022	- 278	2,134	- 306	3,564
- 251	2,044	- 279	2,120	- 307	3,662
- 252	2,035	279 - 280	2,246	- 308	5,331
- 253	2,811	- 281	2,054	- 309	5,247
- 254	2,172	- 282	1,722	309 - 310	4,205
- 255	2,138	- 283	1,433	- 311	3,935
- 256	2,338	- 284	2,526		
- 257	3,976	- 285	2,549		
- 258	2,611	- 286	2,851		
- 259	2,260	- 287	2,735		
259 - 260	3,243	- 288	2,614		

# STEESE HWY FY 74-82 SURFACE MAINTENANCE COSTS

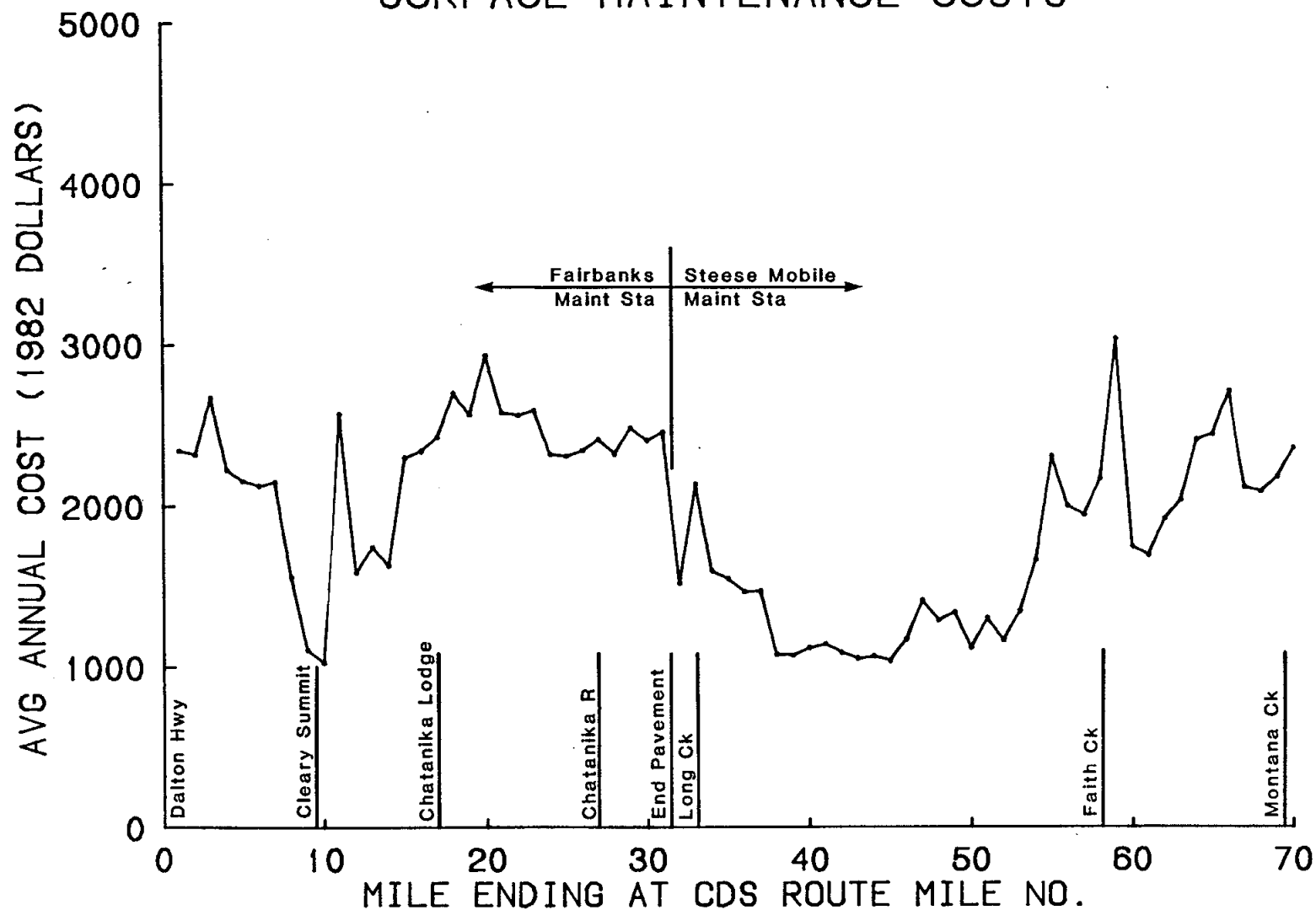


Figure 16

# STEESE HWY FY 74-82 SURFACE MAINTENANCE COSTS

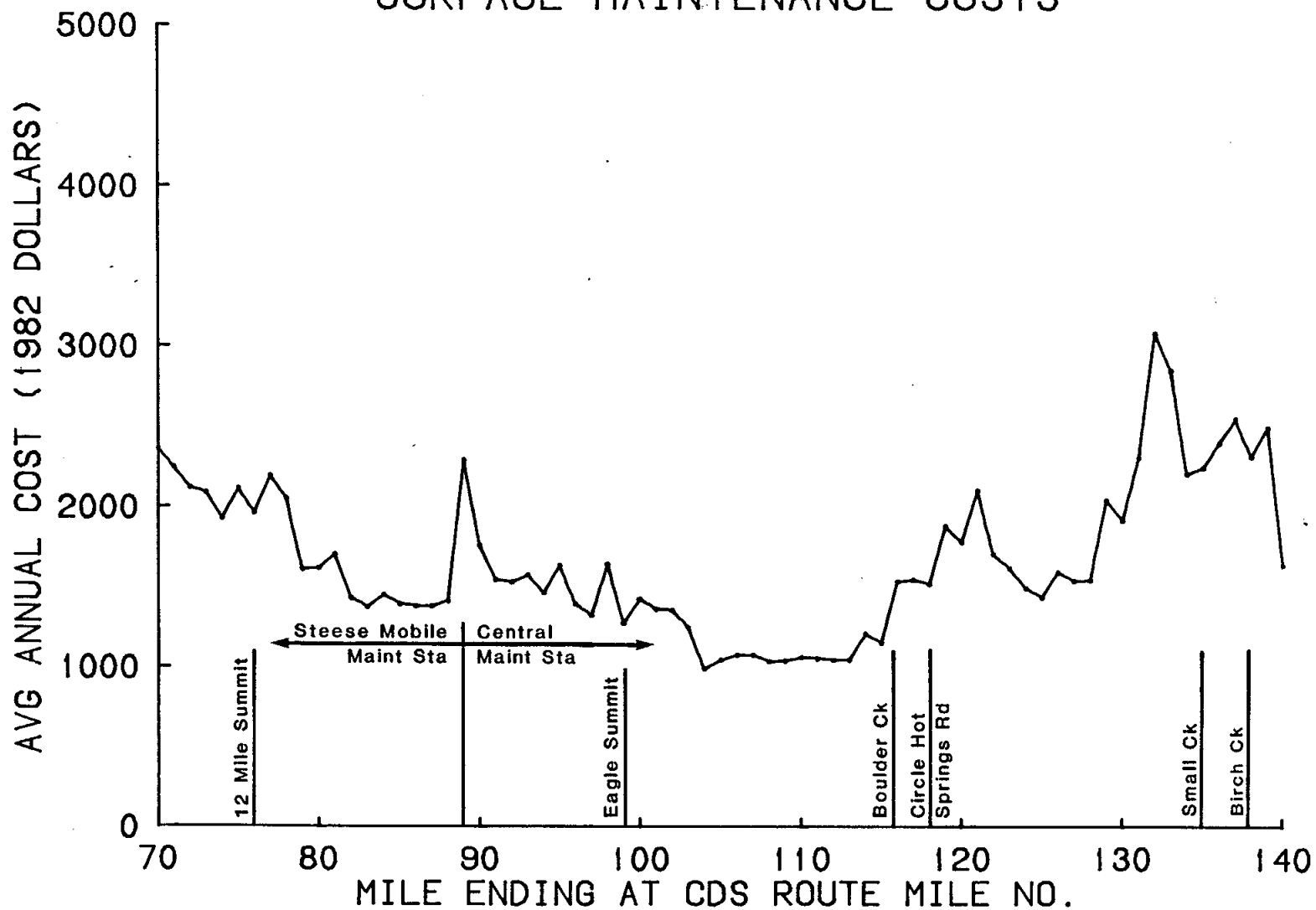


Figure 16 (cont.)

STEESE HWY FY 74-82  
SURFACE MAINTENANCE COSTS

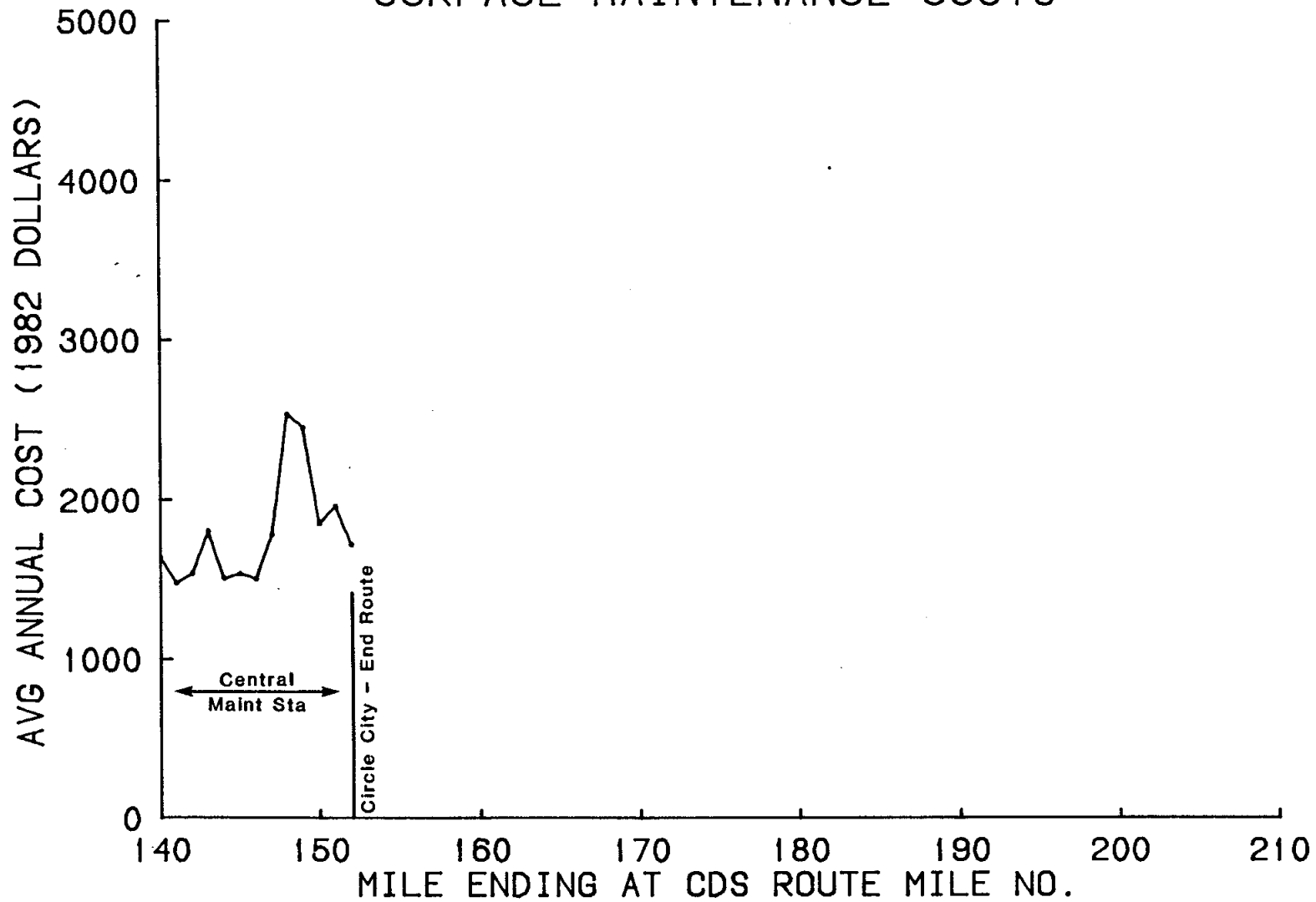


Figure 16 (Cont.)



TABLE 13

Steese Highway, CDS Route 152,000  
Average Annual Surface Maintenance Costs FY '74 - '82

<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 1	2,346	29 - 30	2,407	- 59	3,038	- 88	1,408
- 2	2,319	- 31	2,460	59 - 60	1,747	- 89	2,290
- 3	2,675	- 32	1,520	- 61	1,693	89 - 90	1,735
- 4	2,226	- 33	2,137	- 62	1,919	- 91	1,541
- 5	2,155	- 34	1,597	- 63	2,037	- 92	1,526
- 6	2,127	- 35	1,547	- 64	2,413	- 93	1,571
- 7	2,149	- 36	1,464	- 65	2,448	- 94	1,458
- 8	1,559	- 37	1,469	- 66	2,714	- 95	1,630
- 9	1,105	- 38	1,075	- 67	2,115	- 96	1,390
9 - 10	1,026	- 39	1,071	- 68	2,090	- 97	1,319
- 11	2,572	39 - 40	1,117	- 69	2,181	- 98	1,638
- 12	1,587	- 41	1,140	69 - 70	2,361	- 99	1,271
- 13	1,744	- 42	1,088	- 71	2,242	99 - 100	1,419
- 14	1,630	- 43	1,052	- 72	2,116	- 101	1,358
- 15	2,302	- 44	1,067	- 73	2,084	- 102	1,351
- 16	2,343	- 45	1,038	- 74	1,926	- 103	1,243
- 17	2,429	- 46	1,172	- 75	2,111	- 104	985
- 18	2,702	- 47	1,412	- 76	1,960	- 105	1,040
- 19	2,570	- 48	1,290	- 77	2,189	- 106	1,070
19 - 20	2,936	- 49	1,338	- 78	2,047	- 107	1,069
- 21	2,582	49 - 50	1,121	- 79	1,608	- 108	1,029
- 22	2,564	- 51	1,302	79 - 80	1,614	- 109	1,033
- 23	2,594	- 52	1,164	- 81	1,701	109 - 110	1,056
- 24	2,322	- 53	1,347	- 82	1,428	- 111	1,048
- 25	2,311	- 54	1,664	- 83	1,369	- 112	1,040
- 26	2,344	- 55	2,308	- 84	1,444	- 113	1,042
- 27	2,413	- 56	2,001	- 85	1,388	- 114	1,202
- 28	2,323	- 57	1,946	- 86	1,374	- 115	1,148
- 29	2,486	- 58	2,172	- 87	1,374	- 116	1,530

TABLE 13 (cont.)

<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 117	1,539	- 146	1,502
- 118	1,515	- 147	1,780
- 119	1,877	- 148	2,533
119 - 120	1,777	- 149	2,451
- 121	2,098	149 - 150	1,850
- 122	1,700	- 151	1,960
- 123	1,616	- 152	1,718
- 124	1,491		
- 125	1,433		
- 126	1,588		
- 127	1,534		
- 128	1,539		
- 129	2,039		
129 - 130	1,914		
- 131	2,308		
- 132	3,079		
- 133	2,850		
- 134	2,207		
- 135	2,246		
- 136	2,398		
- 137	2,551		
- 138	2,315		
- 139	2,496		
139 - 140	1,636		
- 141	1,475		
- 142	1,537		
- 143	1,802		
- 144	1,507		
- 145	1,534		

# STERLING HWY FY 78-82 SURFACE MAINTENANCE COSTS

-63-

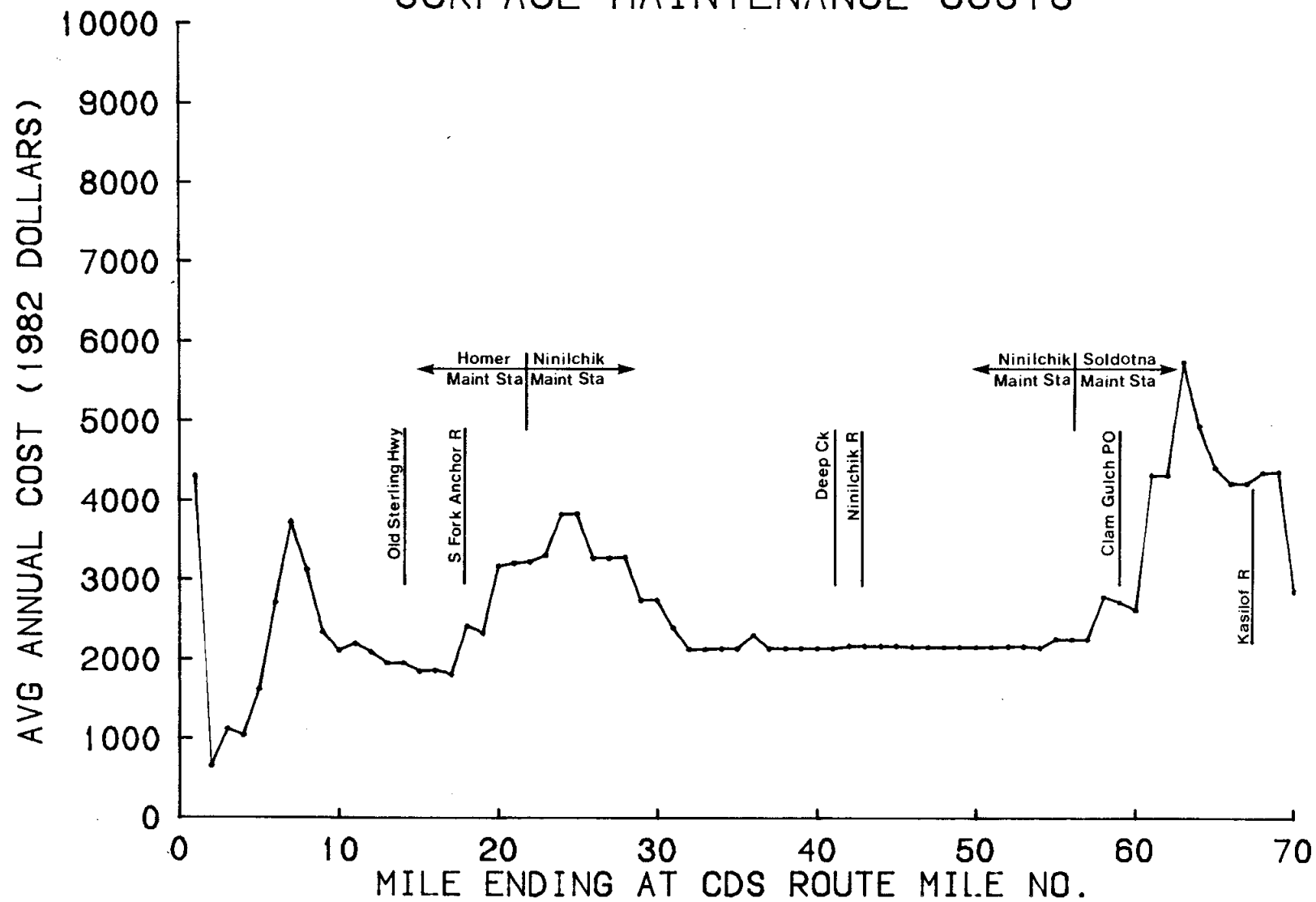


Figure 17

# STERLING HWY FY 78-82 SURFACE MAINTENANCE COSTS

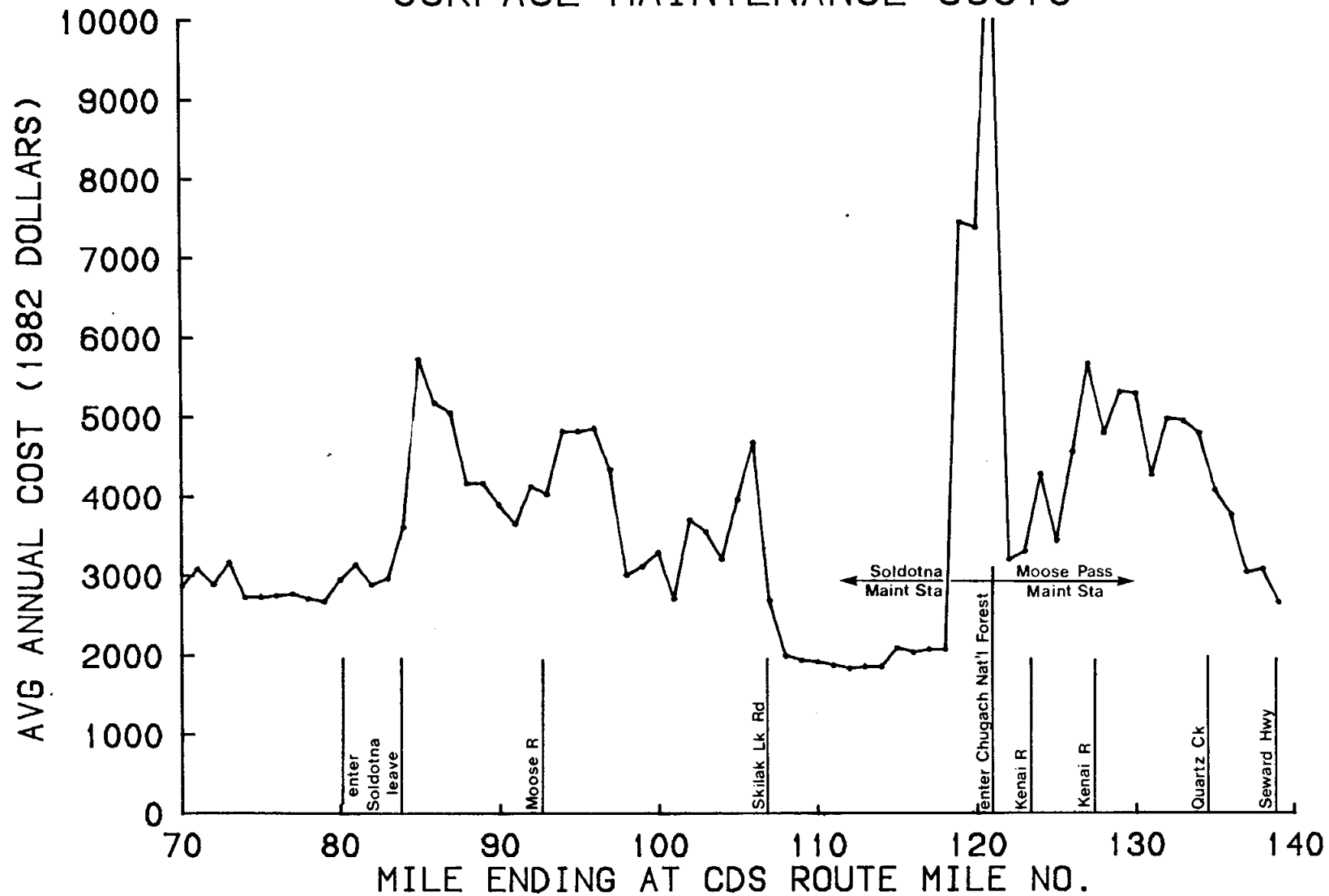


Figure 17 (cont.)

TABLE 14

Sterling Highway, CDS Route 110,000  
Average Annual Surface Maintenance Costs FY '74 - '82

<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 1	4,304	29 - 30	2,745	- 59	2,718	89 - 90	3,894
- 2	652	- 31	2,401	59 - 60	2,620	- 88	4,163
- 3	1,119	- 32	2,123	- 61	4,325	- 89	4,163
- 4	1,041	- 33	2,123	- 62	4,325	- 91	3,651
- 5	1,625	- 34	2,131	- 63	5,743	- 92	4,127
- 6	2,712	- 35	2,131	- 64	4,942	- 93	4,029
- 7	3,728	- 36	2,302	- 65	4,419	- 94	3,636
- 8	3,131	- 37	2,131	- 66	4,225	- 95	4,821
- 9	2,340	- 38	2,132	- 67	4,225	- 96	4,860
9 - 10	2,112	- 39	2,132	- 68	4,361	- 97	4,342
- 11	2,198	39 - 40	2,132	- 69	4,367	- 98	3,011
- 12	2,090	- 41	2,132	69 - 70	2,859	- 99	3,117
- 13	1,947	- 42	2,168	- 71	3,083	99 - 100	3,293
- 14	1,947	- 43	2,168	- 72	2,889	- 101	2,710
- 15	1,847	- 44	2,168	- 73	3,165	- 102	3,705
- 16	1,857	- 45	2,168	- 74	2,730	- 103	3,560
- 17	1,809	- 46	2,158	- 75	2,733	- 104	3,208
- 18	2,413	- 47	2,155	- 76	2,749	- 105	3,957
- 19	2,326	- 48	2,155	- 77	2,771	- 106	4,680
19 - 20	3,168	- 49	2,155	- 78	2,708	- 107	2,685
- 21	3,205	49 - 50	2,155	- 79	2,675	- 108	1,985
- 22	3,224	- 51	2,155	79 - 80	2,948	- 109	1,927
- 23	3,308	- 52	2,161	- 81	3,142	109 - 110	1,912
- 24	3,822	- 53	2,161	- 82	2,886	- 111	1,867
- 25	3,830	- 54	2,148	- 83	2,966	- 112	1,829
- 26	3,272	- 55	2,254	- 84	3,611	- 113	1,854
- 27	3,273	- 56	2,253	- 85	5,732	- 114	1,854
- 28	3,283	- 57	2,251	- 86	5,178	- 115	2,087
- 29	2,745	- 58	2,788	- 87	5,053	- 116	2,032

TABLE 14 (cont.)

<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 117	2,070
- 118	2,070
- 119	7,454
119 - 120	7,389
- 121	11,684
- 122	3,203
- 123	3,301
- 124	4,283
- 125	3,439
- 126	4,562
- 127	5,669
- 128	4,798
- 129	5,312
129 - 130	5,296
- 131	4,270
- 132	4,980
- 133	4,952
- 134	4,801
- 135	4,076
- 136	3,768
- 137	3,042
- 138	3,079
- 139	2,657

# TAYLOR HIGHWAY FY 74-82 SURFACE MAINTENANCE COSTS

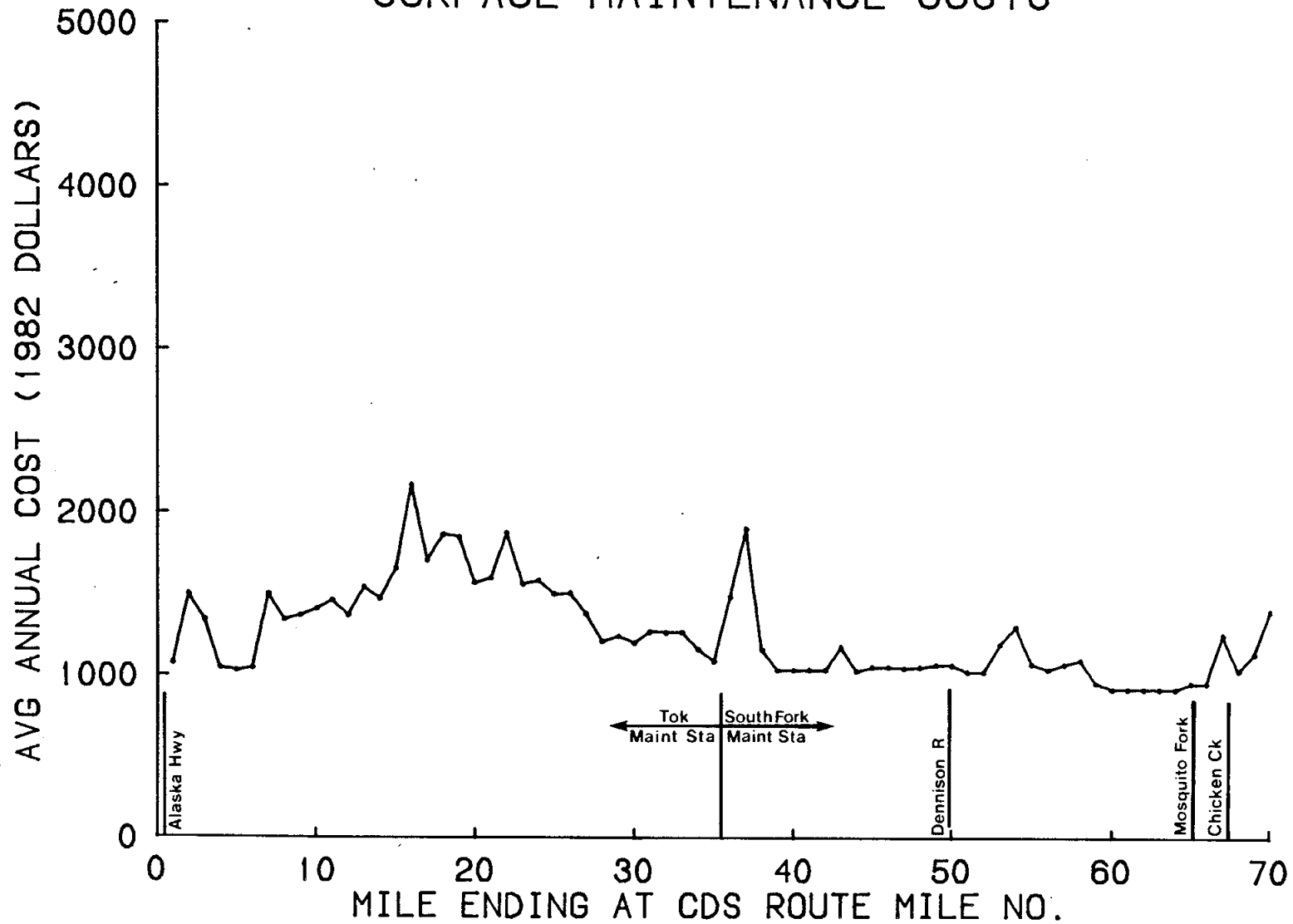


Figure 18

# TAYLOR HWY FY 74-82 SURFACE MAINTENANCE COSTS

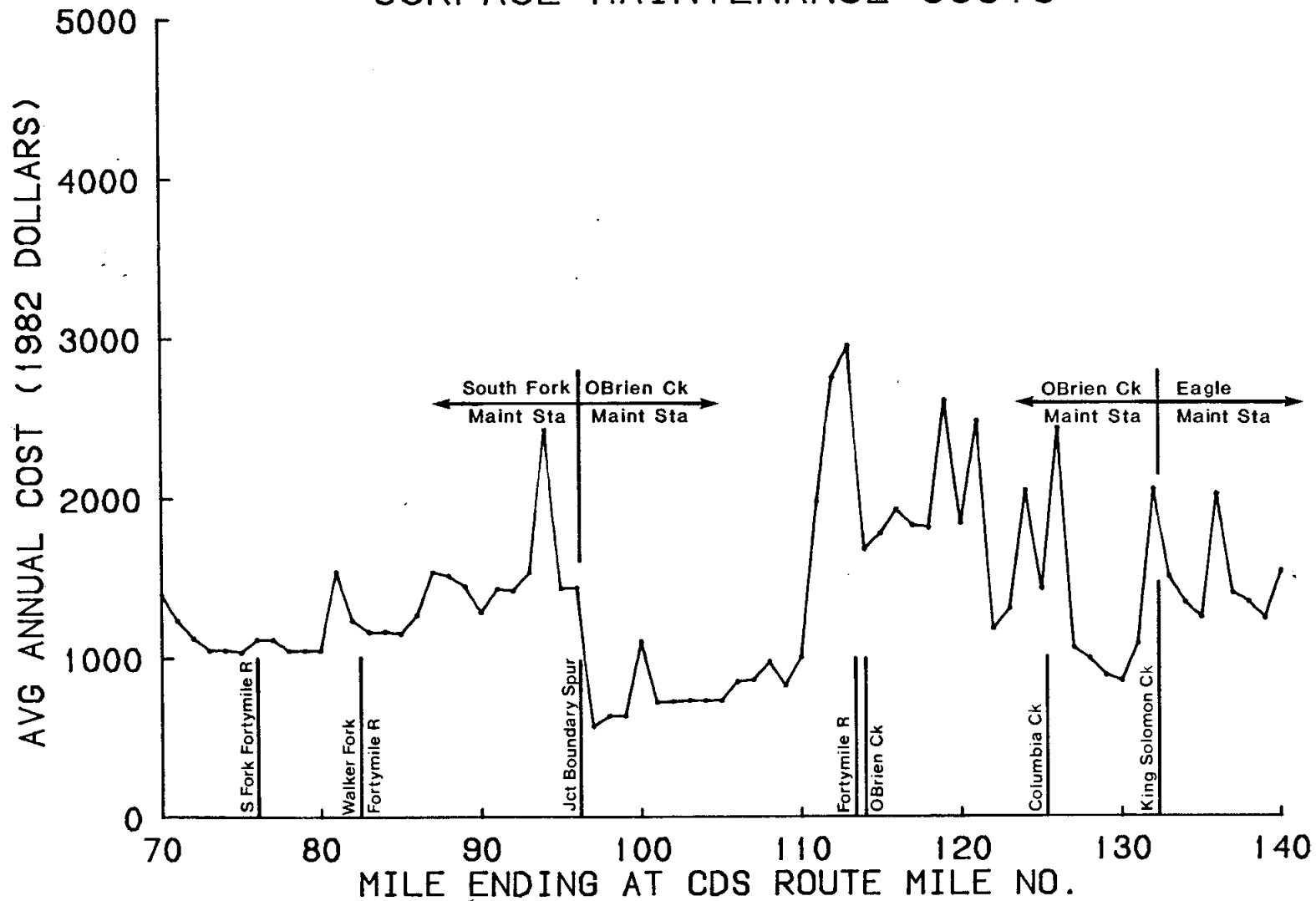


Figure 18 (cont.)



TAYLOR HWY FY 74-82  
SURFACE MAINTENANCE COSTS

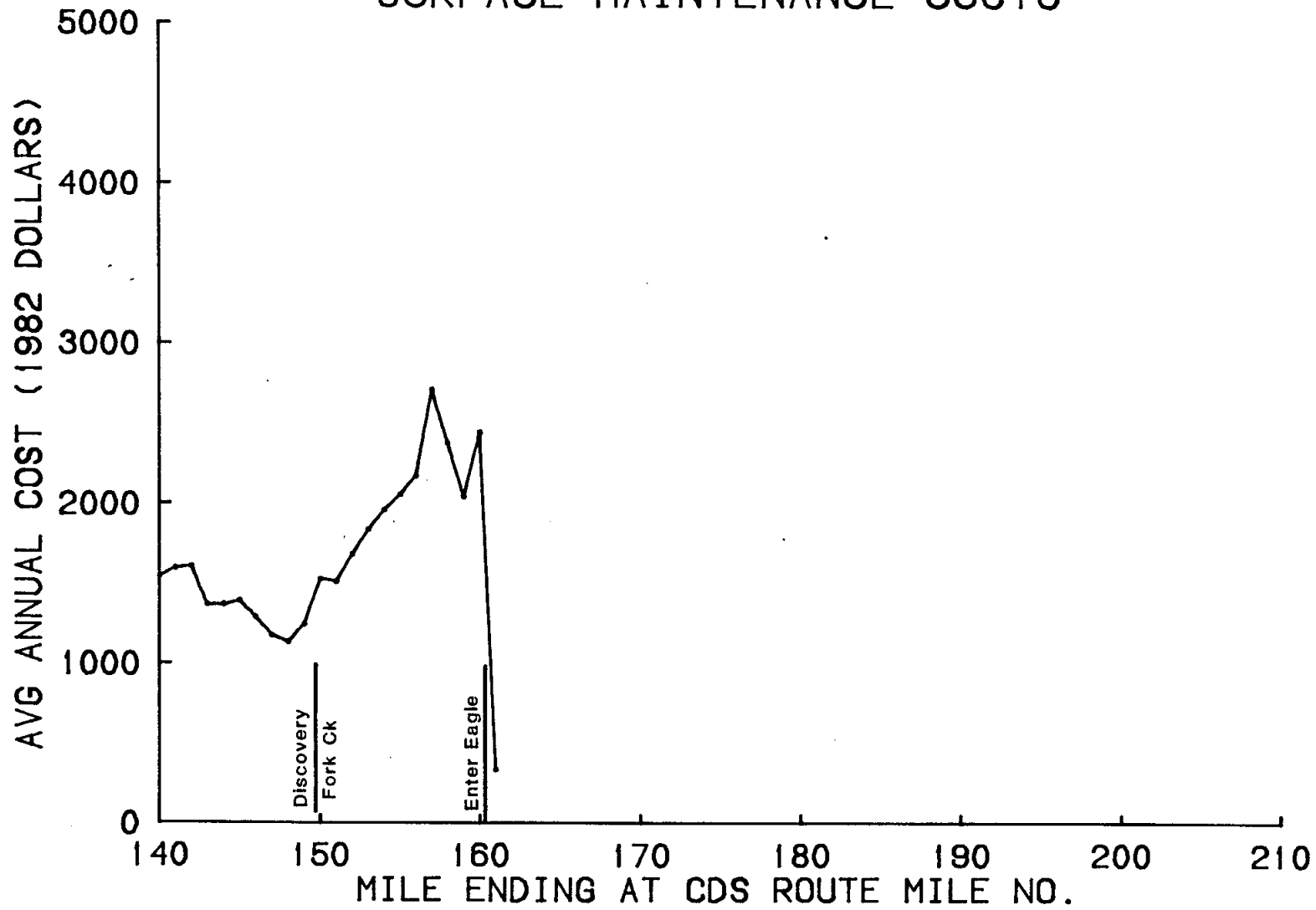


Figure 18, (Cont.)

TABLE 15  
Taylor Highway, CDS Route 250,000  
Average Annual Surface Maintenance Costs FY '74 - '82

<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>
- 1	1,074	29 - 30	1,197	- 59	951	89 - 90	1,264
- 2	1,494	- 31	1,265	59 - 60	914	- 88	1,512
- 3	1,339	- 32	1,261	- 61	914	- 89	1,447
- 4	1,045	- 33	1,262	- 62	914	- 91	1,429
- 5	1,027	- 34	1,158	- 63	914	- 92	1,420
- 6	1,045	- 35	1,081	- 64	914	- 93	1,536
- 7	1,497	- 36	1,477	- 65	952	- 94	2,430
- 8	1,341	- 37	1,898	- 66	952	- 95	1,436
- 9	1,364	- 38	1,156	- 67	1,250	- 96	1,438
- 10	1,403	- 39	1,027	- 68	1,030	- 97	572
- 11	1,457	39 - 40	1,027	- 69	1,132	- 98	635
- 12	1,365	- 41	1,030	69 - 70	1,396	- 99	635
- 13	1,538	- 42	1,030	- 71	1,235	99 - 100	1,102
- 14	1,467	- 43	1,172	- 72	1,125	- 101	720
- 15	1,653	- 44	1,025	- 73	1,048	- 102	725
- 16	2,168	- 45	1,050	- 74	1,048	- 103	731
- 17	1,704	- 46	1,050	- 75	1,036	- 104	731
- 18	1,861	- 47	1,042	- 76	1,116	- 105	729
- 19	1,846	- 48	1,050	- 77	1,116	- 106	848
19 - 20	1,567	- 49	1,063	- 78	1,046	- 107	860
- 21	1,594	49 - 50	1,061	- 79	1,046	- 108	972
- 22	1,870	- 51	1,020	79 - 80	1,046	- 109	826
- 23	1,558	- 52	1,020	- 81	1,538	109 - 110	1,001
- 24	1,579	- 53	1,190	- 82	1,233	- 111	1,977
- 25	1,498	- 54	1,296	- 83	1,162	- 112	2,753
- 26	1,503	- 55	1,067	- 84	1,162	- 113	2,952
- 27	1,376	- 56	1,033	- 85	1,151	- 114	1,678
- 28	1,208	- 57	1,065	- 86	1,264	- 115	1,775
- 29	1,238	- 58	1,091	- 87	1,534	- 116	1,924

TABLE 15 (cont.)

<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 117	1,827	- 146	1,287
- 118	1,813	- 147	1,173
- 119	2,608	- 148	1,132
119 - 120	1,840	- 149	1,243
- 121	2,479	149 - 150	1,525
- 122	1,181	- 151	1,508
- 123	1,305	- 152	1,679
- 124	2,044	- 153	1,835
- 125	1,432	- 154	1,960
- 126	2,435	- 155	2,055
- 127	1,062	- 156	2,173
- 128	992	- 157	2,711
- 129	888	- 158	2,378
129 - 130	852	- 159	2,043
- 131	1,085	159 - 160	2,446
- 132	2,053	- 161	334
- 133	1,506		
- 134	1,343		
- 135	1,251		
- 136	2,023		
- 137	1,403		
- 138	1,345		
- 139	1,243		
139 - 140	1,538		
- 141	1,593		
- 142	1,606		
- 143	1,367		
- 144	1,367		
- 145	1,389		

# TOK CUTOFF HWY FY 74-82 SURFACE MAINTENANCE COSTS

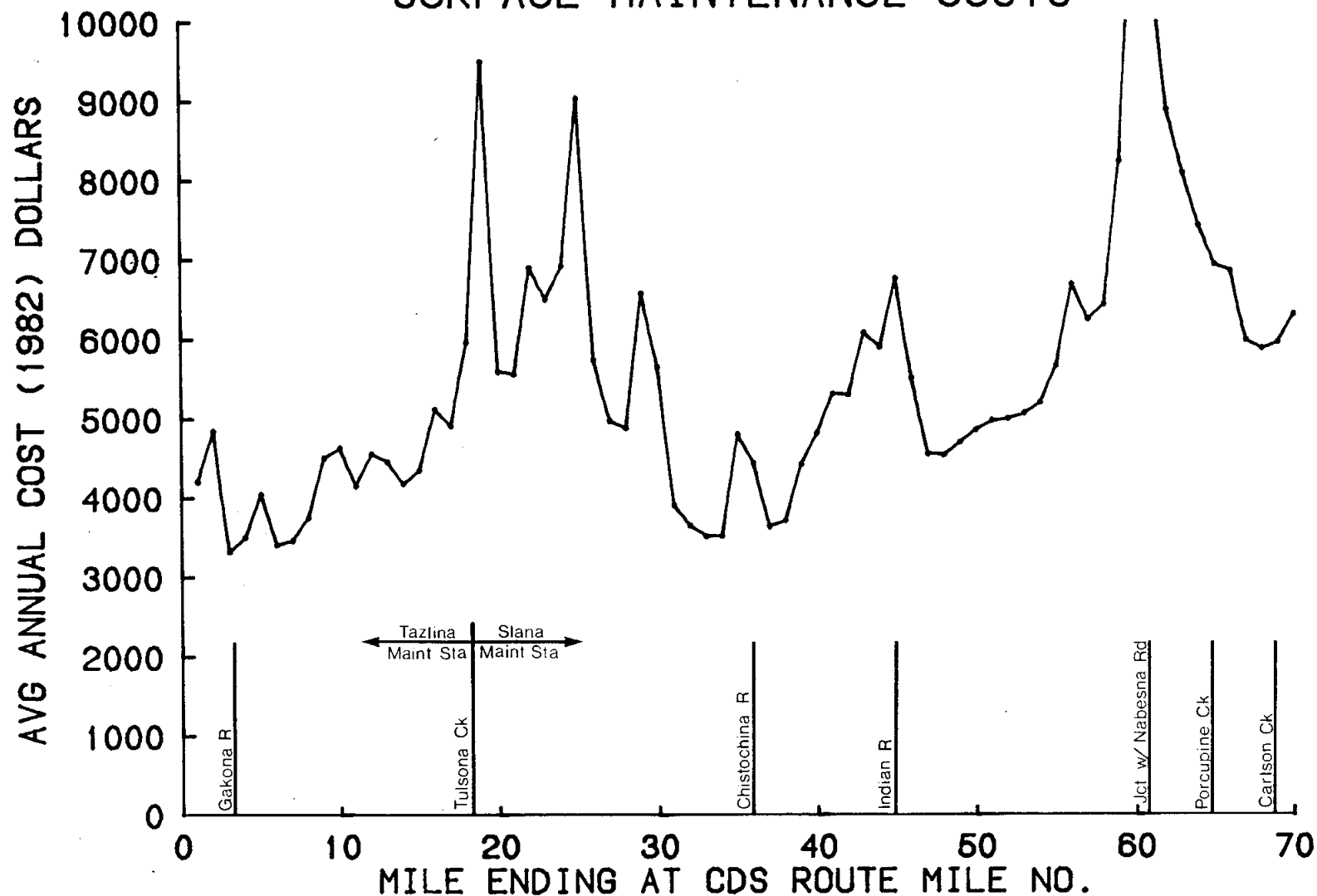


Figure 19

# TOK CUTOFF HWY FY 74-82 SURFACE MAINTENANCE COSTS

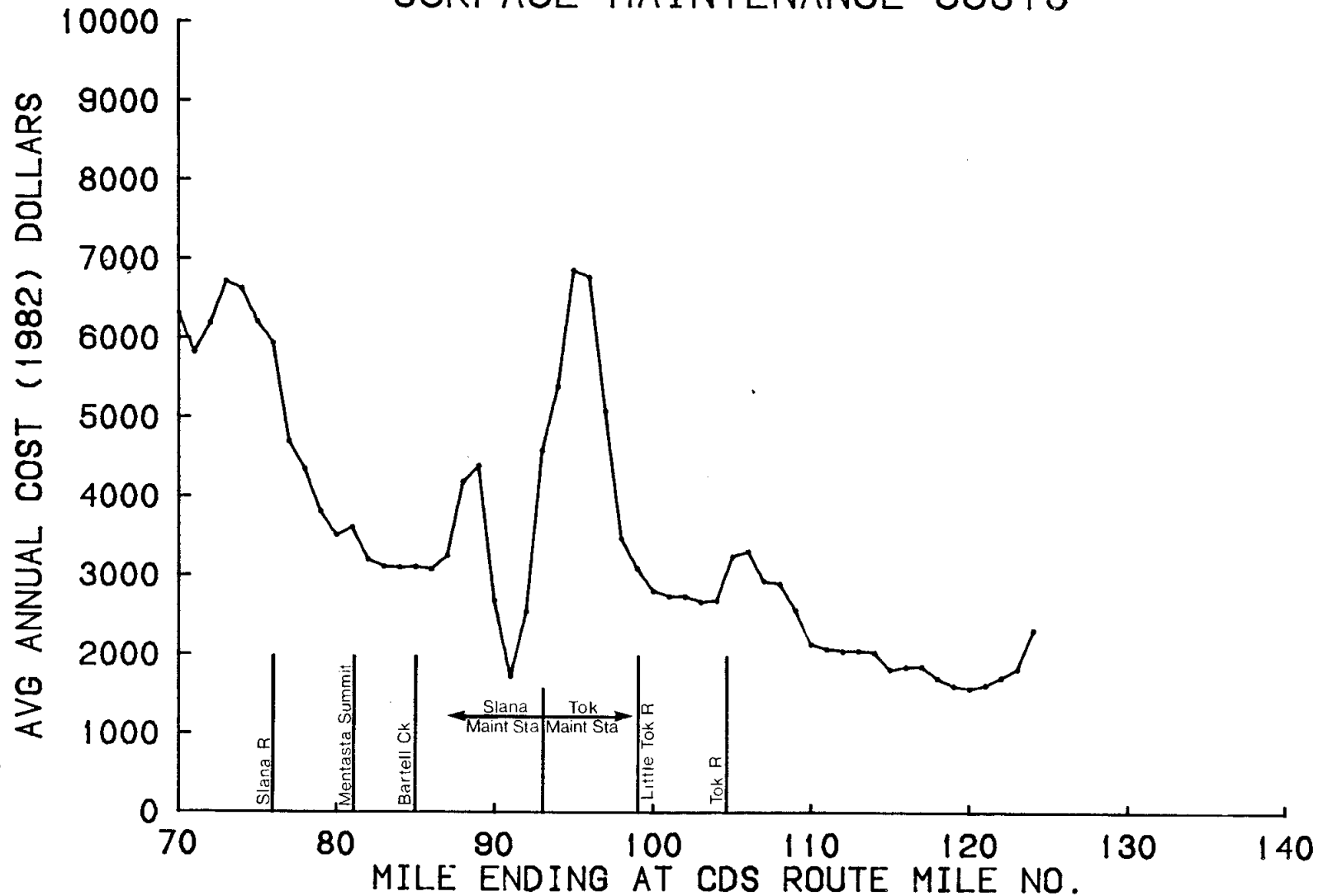


Figure 19 (Cont.)

TABLE 16  
Tok Cutoff Highway, CDS Route 230,000  
Average Annual Surface Maintenance Costs FY '74 - '82

<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>	<u>CDS Miles</u>	<u>Average Cost 1982 Dollars</u>
- 1	4,207	29 - 30	5,653	- 59	8,241	89 - 90	2,687
- 2	4,844	- 31	3,907	59 - 60	12,198	- 88	4,184
- 3	3,323	- 32	3,649	- 61	10,746	- 89	4,390
- 4	3,499	- 33	3,516	- 62	8,888	- 91	1,729
- 5	4,045	- 34	3,521	- 63	8,089	- 92	2,552
- 6	3,413	- 35	4,803	- 64	7,433	- 93	4,589
- 7	3,467	- 36	4,440	- 65	6,940	- 94	5,390
- 8	3,756	- 37	3,637	- 66	6,862	- 95	6,863
- 9	4,507	- 38	3,714	- 67	5,992	- 96	6,775
9 - 10	4,634	- 39	4,418	- 68	5,864	- 97	5,091
- 11	4,155	39 - 40	4,814	- 69	5,962	- 98	3,475
- 12	4,561	- 41	5,308	69 - 70	6,316	- 99	3,093
- 13	4,458	- 42	5,298	- 71	5,825	99 - 100	2,805
- 14	4,184	- 43	6,077	- 72	6,188	- 101	2,738
- 15	4,354	- 44	5,900	- 73	6,719	- 102	2,737
- 16	5,119	- 45	6,764	- 74	6,632	- 103	2,667
- 17	4,914	- 46	5,510	- 75	6,209	- 104	2,685
- 18	5,964	- 47	4,555	- 76	5,935	- 105	3,246
- 19	9,499	- 48	4,541	- 77	4,698	- 106	3,309
19 - 20	5,597	- 49	4,698	- 78	4,352	- 107	2,934
- 21	5,558	49 - 50	4,856	- 79	3,813	- 108	2,902
- 22	6,902	- 51	4,974	79 - 80	3,514	- 109	2,567
- 23	6,506	- 52	4,997	- 81	3,608	109 - 110	2,141
- 24	6,924	- 53	5,064	- 82	3,200	- 111	2,082
- 25	9,034	- 54	5,202	- 83	3,112	- 112	2,055
- 26	5,742	- 55	5,658	- 84	3,101	- 113	2,061
- 27	4,972	- 56	6,685	- 85	3,107	- 114	2,038
- 28	4,878	- 57	6,247	- 86	3,081	- 115	1,824
- 29	6,579	- 58	6,434	- 87	3,250	- 116	1,855

TABLE 16 (cont.)

<u>CDS Miles</u>	<u>Average Cost</u> <u>1982 Dollars</u>
- 117	1,862
- 118	1,710
- 119	1,614
119 - 120	1,582
- 121	1,623
- 122	1,717
- 123	1,826
- 124	2,317
- 125	358

## CHAPTER 4

### IMPLEMENTATION OF RESEARCH RESULTS

This research project has resulted in the compilation of maintenance costs of selected Alaskan highways. Along with the previous report "Compilation of Highway and Airport Maintenance Costs" this information will be useful to regional maintenance supervisors and directors, highway designers and budget planning personnel to ascertain factors involved in building and maintaining different types of roads. This report will be distributed throughout the Department as a reference manual.